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TERS ITS RELATIONS TO INDUSTRIAL EDUCATION

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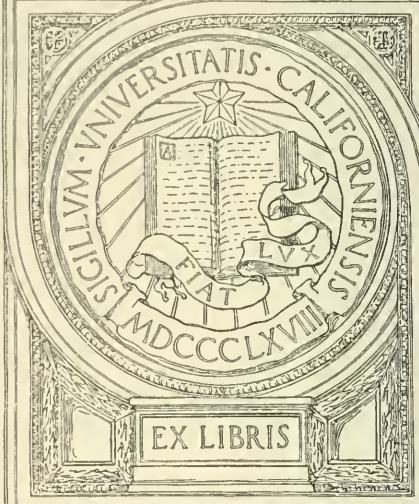


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ROBERT ERNEST COWAN

# THE

# University of California

—AND—

# ITS RELATIONS TO INDUSTRIAL EDUCATION,

AS SHOWN BY

Prof. Carr's Reply to the Grangers and Mechanics;

Prof. Swinton's Testimony Before the Legislature;

The New Education, by "Columella;"

Memorial to the Legislature by Joint Committee of the State Grange and Mechanics' Deliberative Assembly, and other Documents.

BENJ. DORE & CO., STEAM BOOK AND JOB PRINTERS,
512 SACRAMENTO STREET, SAN FRANCISCO.
1874.

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# PROF. CARR'S REPLY

—TO—

# Inquiries of Joint Committee,

—OF—

CALIFORNIA STATE GRANGE,

MECHANICS' DELIBERATIVE ASSEMBLY

—AND—

MECHANICS' STATE COUNCIL,

*September 5, 1874.*

SAN FRANCISCO:
Benj. Dore & Co., Steam Book and Job Printers, 512 Sacramento St.
1874.

"I am of the opinion that, under the new reign of labor, as the industry of man reclaims the whole face of the earth, he will become better fitted for the Paradise and blessing of his Father and God above. Let, then, the reign of labor be consummated on earth. Let its temples, its towers, and its bulwarks rise to the skies.

Let the fruits of its toil hang on every tree, and its golden harvest wave over every field, let its busy enginery clatter along every mountain stream—its steeds of fire and lightning messages course every land and wave, and when this new reign of works has done its utmost and best, our whole duty to God and to man is done and well done, here on the earth."

PROFESSOR J. B. TURNER.

# PROF. CARR'S REPLY

TO THE

# GRANGERS AND MECHANICS

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At a meeting of the Mechanics' State Council August 12, 1874, the following resolution was passed :

"*Resolved*, that Prof. E. S. Carr be and is hereby requested to furnish the Joint Committee of Grangers and Mechanics with such facts concerning the history of the Agricultural College as will enable us to understand all about it, with a view to laying them before the people and the next legislature."

"In your statement we shall also be pleased to learn what you know in relation to the Mechanical Department of the University."

This being transmitted through the President, Gen. A. M. Winn ,was answered by Prof. Carr in the subjoined communication, bearing date Sept. 5 ; read before the Joint Committee Sept. 15th, and published in part in the Sunday Chronicle of Sept, 27th, 1874. The entire document is here given.

*To J. G. Gardner, J. D. Blanchar, W. H. Baxter, of State Grange ; E. D. Sawyer, M. J. Donnovan, Charles C. Terrill, of Mechanics, Deliberative Assembly ; A. M. Winn, G. B. Merriam and J. W. Duncan of Mechanics' State Council Joint Committee*—GENTLEMEN : In reply to the request contained in the above communication, I have prepared the following statement, without access to other documents than the published reports and statements of the Regents and my own private papers, with such information as I have been able to obtain from President Durant and others connected with the College of California, and the various published reports of the Regents.

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During my five years service as Professor of Agriculture my knowledge of the purposes of the Board has been mainly derived, from these sources, the notices of their meetings which have appeared in the newspapers being the first intimation which the Faculty have received regarding matters of gravest importance to them, such as changes in educational policy, appointments and removals. I shall therefore necessarily confine myself to such facts in the history of the Agricultural College as have come under my own observation.

THE FIRST STEP TOWARD THE ENDOWMENT OF AN AGRICULTURAL COLLEGE.

One of the first, if not the very first definite movement toward the endowment of agricultural colleges, was the presentation of a memorial from the Pacific Coast to the Congress of 1873, by Warren & Son, in the Senate, approved and unanimously referred to the Committee on Education. It ably set forth the agricultural capacity of California, its growing importance as an agricultural State, and the unexampled facilities afforded for every department of agricultural education. It attracted respectful attention from eminent friends of agriculture in the Eastern States. Our greatest men had already urged the consecration of our public lands to the education of the people. Europe had moved in the establishment of agricultural and mechanical schools, Congress had given those liberal endowments to "higher seminaries of learning" in the younger States, on which the noble Universities of Michigan, Wisconsin, Iowa and others, are founded. But nothing was done to elevate our industries through education until July, 1862, when Congress, under the sound of hostile cannon, "legislated into being, the great comprehensive system of industrial and scientific education," a system which was to give dignity to labor, and "knit into its very core" practical with theoretical knowledge of all the sciences and arts bearing upon agriculture and mechanic arts. The measure had met with violent opposition from "optimists, pessimists, sham economists, hold-backs and do-nothings." Buchanan had killed it once with a veto, but at last our statesmen carried it through, and Morrill's bill, with Abraham Lincoln's signature, became one of the significant facts of our national history.

Colleges crowded forward to avail themselves of the grant. Denominational schools of all stripes and colors insisted upon dividing and sharing in its benefits. Twenty different institutions presented their claims to it in the New York Legislature alone. There was great danger that the benefits of the grant would be lost between the army of speculators in public lands and the

army of obstructionists to the educational ideas it embodied, a danger not yet averted. Reckless waste and gross violation of public trust had in many states attended the administration of the seminary lands. It was feared that this would prove true of the Agricultural College grant also. In every Western State a handful of men stood between these two fires, under every conceivable form of secret opposition and open hostility, to hold this precious legacy inviolate; and that they have so far succeeded is due to the fact that they appealed directly to the common sense of the people, who do not need the aid of lawyers to interpret its plain provisions.

The first section of the Act of Congress (approved July 22, 1862) "donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," provides that a quantity of land equal to 30,000 acres for each Senator and Representative of the State in Congress be given for the purpose named. Section 2 prescribes how the land shall be apportioned, located and sold. Section 3, that all expenses shall be paid by the States to which the lands belong. Section 4 provides:

That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sales of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in Section 5 of this Act), and the interest of which shall be inviolably appropriated, by each State which may take and claim the benefit of this Act, to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in several pursuits and professions in life.

## SHARE OF CALIFORNIA.

The share of California in this national gift was 150,000 acres of land. On her admission into the Union California received seventy-two sections of land, which were her portion of the fund for higher seminaries of learning already alluded to, and had appropriated them to the endowment and support of a University.

By act of the Legislature, March 31, 1866, an Agricultural, Mining and Mechanical Art College, with a Board of Directors, was established. It never went into operation. The Act was repealed by the Act organizing the University, which became a law March 23, 1868.

The question of location was an important one. The Committee to whom this was referred finally decided against Napa, San Jose and other desirable points in favor of Almeda county and the neighborhood of Oakland. The final choice of a site was afterward determined by the action of the College of California.

The question arose here, as it had elsewhere: "Shall we have an independent Agricultural and Mechanical College, or make such colleges, with that of Mining, parts of a comprehensive plan?" There appears to have been no one in California at that time to sound a warning note against the dangers of subversion, which had already appeared in older States; and though there were many enthusiastic friends of "University education" ready to bear a hand in the building of the young University, there were none to emphasize the practical features.

### THE PROVISIONS OF THE ORGANIC ACT.

The organization of an Agricultural College therefore became incidental to a more comprehensive plan, instead of a leading object, in the very foundation. Still, the organic Act creating the University was sufficiently plain in its provisions, had they been carried out in good faith.

### AGRICULTURAL COLLEGE WITH MANUAL LAROR SYSTEM TO BE DEVELOPED.

It provides [see Section 4,] 'that the College of Agriculture shall be first established; but in selecting the professors and instructors for the said College of Agriculture the Regents shall, so far as in their power, select persons possessing such requirements in their several vocations as will enable them to discharge the duties of professors in the several colleges of mechanic arts, of mines and of civil engineering. As soon as practicable a system of moderate manual labor shall be established in connection with the Agricultural College and upon its agricultural and ornamental grounds, having for its object practical education in agriculture, landscape gardening, the health of the students, and to afford them an opportunity by their earnings of defraying a portion of the expenses of their education. These advantages shall be open, in the first instance, to students in the College of Agriculture who shall be entitled to a preference in that behalf."

### COLLEGE OF MECHANIC ARTS.

Section 5 "provides that the College of Mechanic Arts shall next be established, etc., and that the said Board of Regents shall always bear in mind that the College of Agriculture and the College of Mechanic Arts are an especial object of their care and

superintendence, and that they shall be considered and treated as entitled, primarily, to the use of the funds donated for their establishment and maintenance" by the said Act of Congress.

COLLEGE OF MINES.

Section 6 provides that the College of Mines and the College of civil Engineering shall be next established, etc.

Section 7 "provides that the College of Letters shall be coexistent with the aforesaid College of Arts. But the provisions regarding the order in which the said colleges shall be organized shall not be construed as directing or permitting the organization of any of the specified colleges to be unnecessarily delayed, but only as indicating the order in which the colleges shall be organized, beginning with the College of Agriculture and adding in succession to the body of instructors in that and the other colleges such other instructors as may be necessary to organize the other colleges successively in the order above indicated."

A FARMER FOR SECRETARY.

Section 15 "provides that a competent person, who is a practical agriculturits by profession, competent to superintend the working of the agricultural farm, and of sufficient scientific acquirements to discharge the duties of Secretary of the Board of Regents as prescribed in this Act, shall be chosen by said Board as their Secrteary. The Board of Regents may also appoint a Treasurer of the University and prescribe the form and surieties of his bond as such, which shall be executed, approved by them and filed with the Secretary before any such Treasurer shall go into office. The Secretary and Treasurer shall be subject to summary removal by the Board of Regents."

Section 16 requires the Secretary to reside at and keep his office at the University, for important reasons thereinafter enumerated.

GRAVE DEFECTS.

I feel justified in saying that the position of the Agricultural College is not due to a defective plan of organization, as far as its educational features are concerned. Its defects lie in the extraordinary powers conferred upon the Governor and Board of Regents—powers which, both in the original form and under the skillful later manipulation of the Code Examiner, Regent Dwinelle. leaves the property of the University in their hands, to be "managed, invested, reinvested, sold, transferred, and in all respects managed, and the proceeds thereof used, bestowed, invested and reinvested by the said Board of Regents," (see Section 12 of the organic Act), while (see Section 11 do.) "no

member of the Board of regents or of the University (perhaps this refers to the Treasurer) shall be deemed a public officer by virtue of such membership, or required to take any oath of office, but his employment as such shall be held and deemed to be exclusively a private trust." We have thus far presented the anomaly of an institution created by a public fund, endowed from the public treasury, supported by public taxation, four of whose administrators hold their positions only as State officers, which is to all intents and purposes a private institution, beyond the reach of penalties, of the press, or of public ensure for malfeasance in office.

The amended Codes provide that "the Regents may invest any of the permanent funds of the University which are now or may hereafter be in their custody in productive unincumbered real estate in this State" (see section 1415 of Poltical Code of California), and that if the terms of any grant, gift, devise or bequest are impracticable in the conditions imposed, such grant, gift, devise or bequest shall not thereby fail, but such conditions may be rejected, and the "intent of the donor carried out as near as may be," etc. These large privileges have been exercised as freely as they were conferred. The grant of Congress to "provide colleges for the benefit of agriculture and mechanic arts," they tell us, was "really granted for the encouragement of all branches of modern scientific instruction, and was so construed in the application of it to the University of California."

ANTICIPATORY LEGISLATION.

The history of the Credit Mobilier and of every great fraud committed upon the public under the sanction of law shows that the first steps of the fraud have been to obtain the necessary legislation. In all the shifting scenery of the play the conspicuous figures remain the same.

Regents Stebbins, Dwinelle and Haight, of the present advisory Committee, have been from the beginning principally responsible for the legal provisions which enable them to degrade the Faculty and manage the institution in the interest of capitalists rather than the people.

They put their own construction upon the terms and requirements of the grant in respect to sales and investments, they also construed the provisions of the organic Act with regard to a Secretary to be impracticable, and for five years no attempt was made to comply with them.

Seven members constitute a quorum. The Advisory Committee (five) will always be a majority, and the President is now entitled to a vote. It is easy to see, therefore, how a large body

of twenty-three members may be controlled and managed by skillful combinations.

COLLEGE OF CALIFORNIA.

Before and after the formal organization of the University overtures were made to the College of California, already in successful operation in Oakland, with an able faculty and fully organized classes, to effect its disorganization and the transfer of its classes, buildings, lands, liabilities and assets to the new institution, in which a "College of Letters" might be co-existent though it could not take precedence. Its property was estimated to be worth $80,000. (See Statement of Regents.)

Its founder, Henry Durant, was the pioneer of the higher education on this coast; it is expected that through him the whole history of the relations of the College of California to the University will yet be made public. It is sufficient to say in this connection, that when the transfer was legally effected, on the condition of the uninterrupted continuance of its classes, there was no recognition of the eminent services of Mr. Durant to education in the formation of the new Board; nor was the intent of the donors carried out according to their understanding of what was practicable or "in good faith" toward themselves or the people of the State. Among these Trustees were some of the best educated men in the community, with a large experience and knowledge of the peculiar industrial conditions of the coast, such as Sherman Day, Henry Durant and others. Into whose hands was the execution of this great, though "private trust," committed? A careful reading of the organic Act will show that nearly all the responsibility was thrown upon the Governor. (See Section 11.) Besides the six ex-officio members, there were eight appointed members "to be nominated by the Governor by and with the consent of the Senate," and the remaining eight members were to be "chosen from the body of the State," by the official and appointed members, to hold their office for the term of sixteen years, according to classification. All vacancies were to be filled by appointments of the Governor. If I am rightly informed, Governor Haight, did not make any appointments until after the adjournment of the Legislature, thus dispensing with confirmations. He then chose Samuel Merritt, John T. Doyle, Richard P. Hammond, John W. Dwinelle, Horatio Stebbins, Lawrence Archer, William Watt and Samuel B. McKee.

The first meeting was held on the 19th of June, 1868, when these appointed Regents proceeded to elect "from the body of the State" Isaac Friedlander, Edward Tompkins, J. Mora Moss,

S. F. Butterworth, A. J. Moulder, A. J. Bowie, Frederick F. Low and John B. Felton. Not a single representative of the agricultural or mechanical classes appear among these names.

ORGANIZATION AND GETTING TO BUSINESS.

The first business which engaged the attention of the now complete Board was the disposition of the lands. This was put into the hands of a Committee, of which Friedlander was Chairman. Not long afterward Regent Freidlander resigned, and another eminent friend of agriculture from the body of the State, but from the City of San Francisco.—Louis Sachs, was appointed in his place. On the 2d of March, 1869, the Board received a proposition "from a responsible party to purchase the entire grant of 150,000 acres for $3.50 per acre in gold."

This party was no other than the ex-Regent and Chairman of the Land Committee, Mr. Friedlander. This proposition was declined. An Act had just been passed through Congress conferring exceptional privileges upon the State of California in the matter of locating its lands. (See statements of Regents before Joint Committee of the Legislature, pages 26 and 27.)

The Board had full powers under the Organic Act to "locate and sell such lands for such price and on such terms as they shall prescribe." (See Section 20 of Organic Act).

These specialties of land location are better known to the Regents and purchasers than to the public or to myself.

The appointment of Mr. Moulder as Secretary (his place as Regent being filled by John S. Hager), was an evasion of the most explicit requirements of the organic Act, defining the qualifications and duties of that office. (So far from saying this with any unkindness to Mr. Moulder, I take pleasure in testifying to the uniform kindness which has marked his relations to the Faculty of the University). The appointment of Mr. Ralston as Treasurer, who became also a Regent on the resignation of Governor Low, and of General George B. McClellan as President, belongs to this period of the history of the Agricultural College.

Four Professors were soon after appointed in accordance with section Three of the Organic Act, viz: Professor John Le Conte of the University of South Carolina, to the chair of Physics and Industrial Mechanics; Professor Joseph Le Conte of the same, to the chair of Geology, Natural History and Botany; Professor R. A. Fisher of Grass Valley, to the chair of Chemistry, Mining and Metallurgy; Professor Martin Kellogg of the College of California, to the chair of Ancient Languages. General McClellan having declined the Presidency, to the regret of

many ardent friends of the University, Professor John Le Conte was called by telegraph to assist in the organization. He arrived in May, and in July following four additional professors and two instructors were elected, among these Ezra S. Carr, as Professor of Agriculture, Agricultural Chemistry and Horticulture. In my letter to the Board accepting the appointment, I defined my position and understanding of its duties, in the following words, "my best efforts will be devoted to develope, and elevate the Agriculturai pursuits of the State to the rank of the learned professions, and to make the University the exponent of the industries, learning and intelligence of the age.
Believing that the Agricultural are and ever will be the leading interests of the State, I doubt not the Board will afford every reasonable facility in teaching the public not only through the class-room, but through every avenue of approach."

Nothing could have been more complimentary than the terms in which my appointment was communicated to me.

The Board publicly stated that they "had been exceedingly fortunate in the selection of these gentlemen, *all of them* being eminent in their several departments and some of them having achieved a national reputation." Twenty thousand dollars was appropriated for chemical and philosophical appratus which Professor Fisher was sent to Europe to procure. (See Report of Superintendent of Public Instruction, Regent Fitzgerald, for 1868-9, page 27.) Professor John Le Conte became acting President and applied himself with zeal to the task of creating an institution looking forward and not backward for its inspiration. No man could have been found so well fitted by his training, his tastes or his character for the just and impartial prosecution of his work. The working plan as exhibited by him in the Prospectus and first Register gave entire satisfaction to the Faculty and friends of education. It declared the University to consist of five distinct colleges, four of arts and one of letters, with a full course of study continuing for four years, with appropriate degrees. They were: 1. A State College of Agriculture. 2. A State College of Mechanic Arts. 3. A State College of Mines. 4. A State College of Engineenig. 5. A State College of Letters.

### OPENING OF THE UNIVERSITY.

The University was formally opened in Oakland in September, 1869, with about forty students, most of whom had previously belonged to the College of California. By reference to the curriculum it will be seen that the special studies of agriculture and horticulture are confined to the third and fourth

years of the course; the first two years being initial, it was therefore thought best to employ a part of my time in bringing the University to the notice of the people in the different parts of the State. I had, as a Regent and Professor for eleven years in another State University, become convinced of the necessity of awaking a living interest among the people by making the influence of the higher institutions felt upon the lower schools, which are their natural feeders. I therefore, with the approbation of the Board and Faculty, occupied my first year with two lectures a week to the advanced class, with a course of twelve lectures in the normal school, and in lecturing to agriculturists and teachers at their various gatherings. Every moment of leisure which I could spare from these occupations was spent in studying the capacities of the University domain at Berkeley, for such practical work as I knew most of the States were successfully prosecuting in their agricultural colleges. I found the domain to consist of something over 300 acres, amply sufficient for all necessary experimental and illustrative farming and gardening, though hardly commensurate with the agricultural importance of our State. Well-sheltered valley land offered facilities for experiments in acclimatization, hillsides of various exposures for orchards and vineyards and forestry. Mr. Lewelling and other eminent horticulturists assisted me with their experience.

THE FIRST PLANTING.

January 5, 1870, I received a note from Secretary Moulder, informing me that Doctor Merritt had been authorized to expend $1,500 in "ornamenting the grounds" (without any plan having been adopted), and suggesting that I should confer with him respecting the "introduction of new and valuable plants." I did so, and replied to Mr. Moulder the next day as follows:

* * * * * "I have been very desirous of laying out my work in the Agricultural Department so as to loose no time in demonstrating its utility. My understanding of what the work is to be, aside from teaching, is substantially what you hint at in your letter, and while awaiting an invitation from the Board or some member of it to express my views of the proper disposition of the grounds to be devoted to agricultural and horticultural purposes, I have opened correspondence with various parties at home and abroad with a view to obtaining seeds and plants for naturalization. I have written to Milne-Edwards of the Garden of Plants Paris, for advice, plans, etc.; to Kew Gardens; to Dr. Mueller of the Botanic Gardens at Melbourne, Australia, and I hope to be able, through Governor Low, to

secure something from China and Japan. "We want on the University grounds an experimental garden, where the value and mode of culture of all important crops can be accurately determined, and new things tried on a small scale, something like what (as the accompanying document will show) is being done in the University of Wisconsin. Besides this, we want proper horticultural gardens where not only the tea plant (Mr. Moulder had specially recommended experiments with the tea plant,) but the mulberry, and every variety of grape, fruit and nut which can be grown with or without protection can be studied. The new planting of each year ought hereafter to be of new varieties of trees and shrubs; we ought to show the finest hedges, screens and belts of timber trees; all that is of economic value in the vegetable world."

Dr. Merritt complied with Mr. Moulder's request about the tea plants, but my opinion was never asked concerning the other planting. It consisted of a half dozen kinds of the commonest acacias, blue gums and pines distributed in masses all over the grounds, as appears at the present time.

Early in May I sent the following communication to the Board:

UNIVERSITY OF CALIFORNIA, May 5, 1870.

*To the Honorable Regents of the University*—GENTLEMEN: In view of the probability that the University will continue to occupy its present quarters in Oakland for a longer time than was at first contemplated, I would respectfully ask you to take such action in behalf of the Agricultural and Horticultural departments as will secure their practical efficiency when the removal to Berkeley gives an opportunity for field instruction. Unlike the other Colleges of the University this requires something more than an outlay of money for its equipment. The loss of a single season of growth is a serious one, because an exhibition of the methods of scientific culture is needed to demonstrate the value of the training which we propose to give. What Cornell and Amherst, and various other Universities on the same foundation as ours have done at the outset, in laying out experimental farms, planting orchards and botanic gardens, erections of horticultural buildings, etc., it seems to me important to have done here, with the least possible delay. It is one of the most important objects of this Department to attract students into the business of agriculture, and it will be easy to draw them to Berkeley, not only from California but from the older States, as soon as we can offer the same facilities for study which other institutions afford, nature having given us advantages to be found nowhere else; and it is important for us to command the hearty interest of farmers and fruit growers in our work, by experiments made on a small but accurate scale, and carefully reported.

With an outlay not exceeding that already made to the other Colleges the grounds of the University may be made in the next five years a complete exposition of the agricultural and horticultural products of California. With this object in view I beg leave to offer the following suggestions:

First—That the Board immediately locate such portions of the University domain as are to be devoted to agriculture and horticulture, and cause the same to be accurately surveyed and mapped. In my judgment the minimum apportionment for various purposes should be nearly as follows: For farming proper, including ground for students and other experiments, thirty acres; for an orchard of specimen fruit and nut trees, planted with a view to study by catalogue,

forming a museum of pomology, fifteen acres: for vineyard, mulberry, textile and oil producing plants, five acres; for botanic garden proper, *i. e.* a collection of all useful medicinal, native and foreign plants capable of acclimatization, including an arboretum, twenty acres; and for vegetables and small fruits, five acres. Reservations should also be made in a manner to subserve general ornamental effects, of places for belts of timber, wo odland, etc., to illustrate forestry. Second —That the supervision and direction of this work be assigned to the Professor of Agriculture and Horticulture, who shall keep accounts of expenditures, records of plantations, making an annual exhibit of the same to the Secretary as a part of the Regents' report, and those demonstrating the profits of every crop and of the methods of culture adopted, and that as soon as practicable, by the erection of a farm house or such other residence as the Board may deem proper, the Agricultural Professor move to Berkeley and have these interests in charge. Third —That a fixed annual appropriation be made for the purchase of seeds, nursery stock, and expense in obtaining foreign plants. I would also respectfully suggest that the building designated for the College of Agriculture be constructed with reference to the use of an Agricultural College, whatever others it may temporarily serve. The building so called on the present plans is arranged simply for a school of chemistry and metallurgy

I remain your obedient servant,

EZRA S. CARR.

P. S.—Since writing the foregoing, I see by reference to the organic Act, that the superintendence of the work referred to is made the duty of the Secretary of the Board, but the work itself constitutes the essential feature of an agricultural college, and I therefore submit these considerations to the Board, the immediate outlay being inconsiderable in comparison with the importance of results.

PROFESSOR CARR'S ROVING COMMISSION.

To this letter I received no answer, verbal or otherwise, unless the following resolution of the Board passed June 21, 1870, may be so considered:

*Resolved*, that in order to extend the advantages of the Agricultural College of the University to the largest number of citizens possible, and especially to persons practically interested in farming, fruit culture, wine making, wool growing and stock raising, the Professor of Agriculture, Agricultural Chemisty and Horticulture shall visit, as far as possible, all the agriculture centers of population in the State, and in every convenient neighborhood, where suitable accommodations can be obtained, deliver one or more lectures, illustrated where practicable, upon subjects connected with agriculture likely to be of most value and interest to the people of the locality. In these lectures it shall be his care to disseminate such information derived from study, from observation, from correspondence and general experience as will be of practical use to the farmers, fruit growers and stock raisers, having special reference to the imparting of reliable information upon the nature and best mode of culture of such new crops, fruits, trees and vines (and the preparation of their products for market) as may be adapted to the soil and climate of California, and likely to increase the productive resources of the State. His course of lectures shall embrace the branches for which instruction is now provided in the University, viz: Agriculture proper, Agricultural Chemistry, Zoology, Horticulture, Geology, Veterinary Science, Botany, Rural Economy, Meteorology, Diseases of Animals and Plants, Forestry, and all kindred subjects: it being the intention of the Regents by the course here adopted to transfer the Agricultural College of the University from the closet to the field, and make its instruction of practical value to the people of the State. These lectures shall be free, and public notice shall be given of the time and place of their delivery.

During his tour through the State, the Professor of Agriculture shall carefully examine the growing crops, study their culture, noting particularly any exceptional influences calculated to improve or injure them, and communicate the result of his observations in his lectures. He shall take special pains to collect statis-

ties of the crops, flocks and herds of the State and shall report them from time to time for publication. He shall open communication with all local Agricultural Societies, and so far as possible, place his services at their disposal and deliver his instructions under their auspices.

*Resolved*, That the Board of Regents will themselves procure, from all quarters, at home and abroad, rare and valuable seeds and will distribute the same, through their Secretary and Professor of Agriculture, throughout the State, to such persons as desire to test their growth.

These resolutions are published entire in the statements of the Regents already referred to (page 69) as an evidence of their good will to the Agricultural College.

Though this resolution was absurd in its nature and became a jest among the teachers of the State, I endeavored to carry out its spirit, as far as my entire time, including vacations, and the constant and gratuitous aid of my family, permitted. The correspondence elicited by this resolution, which was published in nearly every newspaper in the State, became no small part of each day's duties. This resolution has never been revoked, altered or amended. The only change in the programme thus laid down, of which I have ever been informed, was in a resolution adopted by the Regents at a meeting held November 22, 1871, when the Secretary was ordered to notify me "to incur no additional expense for traveling while delivering lectures, until further notice." During the previous year the Board had paid my traveling expenses. "You will observe," the Secretary stated, in his official communication, "that the order does not necessarily involve the discontinuance of your valuable lectures, but only the cessation of further cost to the University. The various bodies and associations for whose benefit these lectures are delivered should pay all necessary expenses," etc. From that day to this the Board have never incurred a cent of expenditure for any such purpose.

### PROFESSOR CARR GETS TWO APPOINTMENTS IN ONE DAY.

At a meeting of the Board, October 4, 1870, Mr. Butterworth introduced the following resolution, which was adopted:

*Resolved*, That the Professorship of Chemistry, Mining and Metallurgy be abolished, and that the duties of the Chair be devolved on the Professor of Agriculture and Agricultural Chemistry.

This abolished Professor Fisher, who was allowed his salray to the end of the current month. It is proper to state that neither Professor Fisher nor myself, President Durant or any member of the Faculty had the slightest intimation of this action until after it was accomplished. At the same meeting (October 4th.) the Secretary was instructed to cast the ballot of the Board for the following gentlemen "to fill the various Chairs in the Medical Department of the University." I was elected

Professor of Chemistry. Having just completed a course of fifty-six lectures on that subject, the duties of our respective chairs having occupied Dr. Le Conte and myself during the previous vacation in the University proper, these simultaneous appointments demonstrate the sentiments of the Board as to my "unfitness" and "incompetency."

THE AGRICULTURAL COLLEGE FARM SOLD.

A very significant fact, taken in connection with the new duties of the Agricultural Professor, and which has very important bearings upon later measures, was the proposition of the Executive Committee, through Mr. Butterworth, to dispose of "certain lands outside of the University site, which could with propriety be disposed of, as they are not needed for the use of the University." The appraised value when the land was purchased was $18,000 for building lots, $14,000 for one hundred and twelve acres of so-called "mountain land," and $2,800 for another parcel—in all, $35,000, estimated value. (See report in *Alta California* of meeting of Board, November 10 or 11, 1870.) This included "all the College Water Company's rights." (See "Statements" of Regents to Joint Legislative Committee, March 3, 1873, page 40.) It included the best land for agricultural and horticultural purposes in the possession of the University. This transaction, so fatal to the prospects of the Agricultural College, was actuallyconsum mated November 11, 1870, my first and only knowledge of it being obtained through the newspapers. I was told, and believe, that President Durant strongly disapproved of the action when it came to his knowledge, and a former Trustee of the College of California took the ground that it was illegal. The object attained was the purchase of the Brayton property, effected by the Regent who was acting as the agent of the estate.

This transaction is claimed by the Regents to have added materially to the property of the University and "profitable to the State." The property parted with, obtained by donation of the College of California, consisted of nearly if not quite 200 acres of land, immediately adjoining the present domain and site of the University, which the Regents say on page 46 of their statements is "worth at low valuation, $1,000 an acre." Estimating the value of the water rights, disposed of in this sale, and which to the Agriculture College are inestimable—and without considering the importance to the University of holding theose contiguous "parcels;" had they not been required for Agricultural experiments, or the illegality of employing any part of the land fund in the purchase of property for which the Uni-

versity had no use, (the last block purchased,) the loss to the University in money value alone may be stated at from $175-200,000 dollars. The College Block recently sold for $54,000, was already owned by the University when the Brayton purchase was made.

Allow me to state in this connection that Msssrs. Marshal P. Wilder, Elwanger and Barry of Rochester, and Downing of Newburg, had visited the University grounds, and gave me the benefit of their experience in regard to their uses. Twenty eminent agriculturists and editors from the Eastern States were taken to them that summer, and finally General Horace Capron, from the Agricultural Bureau at Washington, fresh from a visit to each of the Eastern Agricultural Colleges, made valuable suggestions respcting our practical work, which suggestions were duly communicated to the Board of Regents. The manner in which I attempted to carry out the wishes of the Regents will appear in the reports of my work, made to them from time to time. That they warmly commended it will be seen in their official report to the Governor (see page 12 of Regents report for 1872), where they say: "Professor Carr has been diligently engaged in lecturing in different parts of the State. He has had large and attentive audiences, and it is not too much to say that through him thousands have received the benefit of the instruction of the Agricultural College of theUniversity."

The subjoined are true copies of my

REPORTS OF PROGRESS AND SUGGESTIONS TO THE REGENTS.

OAKLAND, November 10, 1870.

*To the President and Board of Regents*: Since the date of my last communication, and during the summer vacation, I have given a course of fifty-six lectures in the Medical Department of the Uinversity (late Toland Medical College). I have also given nine addresses before the State and two County Teachers' Institutes, and four addresses on different public occasions. To accomplish this I have traveled about two thousand miles; have spoken in San Francisco, Oakland, Pacheco, Marysville, Vallejo, San Jose, Sacramento, Stockton, Jackson and Chico, to not less than thirty thousand people, endeavoring to interest them in a rational development of our industrial interests, and to show the relations of these to education,and especially to make the objects and scope of the University and its practical value to the State more thoroughly understood. The policy of the Board in popularizing the University, by bringing its instructions into direct contact with the people, in the admission of young ladies, in the development of the Military Department, meets universal approval. In many places the people have pledged themselves enthusiastically to its support. In all cases I have declined proffered compensation for service or expense, explaining that I was doing the work assigned me by you. The people have replied that they will work for the University through their representatives. At present, in addition to outside work, I am delivering in the University three experimental lectures a week on chemistry and its applications, to a class of twenty young men and about the same number of young women, which numbers are daily increasing. It was a part of my plan to have made a report before the close of the present year to the Board of Regents on the industrial and agricultural interests of California, con-

taining a catalogue of products, especially of wines, grapes, wine growers, etc., for use at home and abroad, "an industrial year book," for 1870. Such an exhibit of the capacities and cultures of California, published by authority of the Board of Regents, would not only command more of public respect and attention than the same information derived from other sources, but would immediately demonstrate the activity and usefulness of the University. Since writing the foregoing, November 10th, I have given a course of three lectures at Watsonville, three at Santa Cruz and two at Sacramento.

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UNIVERSITY OF CALIFORNIA,
OAKLAND, July 18, 1871.

*Gentlemen of the Board of Regents:* In accordance with your instructions I have since the commencement of the present year, in addition to my regular University instruction, given a course of twelve experimental lectures in Brayton Hall to the Preparatory Department, a course of eleven lectures to the pupils of the Deaf and Dumb and Blind Asylum (some of these will enter the University) six to the students of the Mechanic Arts College in San Francisco, three additional lectures in the city, seven in the different towns of Alameda county, eight in Stanislaus, four in Contra Costa, five in Sacramento, five in Solano and one in Napa county—sixty-one in all. These lectures, with few exceptions, have been experimental ones, as fully illustrated as those given in the University, and all related to agricultural and educational matters. To accomplish this I have traveled over three thousand miles. As I could not be absent more than two days at a time, exclusive of Sunday, I have been unable to visit the more remote parts of the State, and shall occupy a part of the vacation in this work. The lectures have invariably been well attended, and I find no lack of appreciation or interest in the work the University proposes to do for the people of the State, wherever it is understood. I have also made several excursions (at my own expense) into different parts of the State for the purpose of obtaining and giving information with regard to important industrial operations. During the collegate year I have given three experimental lectures per week, occupying four hours time (each lecture requiring some three hours of laboratory work in its preparation) to the third class; in addition, during the past term, one lecture a week on health and hygiene to the fourth class. During the past few weeks I have unpacked the apparatus belonging to my department, and arranged it as far as practicable in the laborator yand new lecture-room. I have also added to the technical cabinet several valuable sets of specimens illustrating important arts. In addition to the work of the past year, the curriculum of the College of Agriculture and Mines will call for instruction the coming year in agricultural and analytical chemistry, assaying and mining, agriculture and horticulture. Of necessity this requires more instructional force, in reference to which permit me to make one or two suggestions; First—That the Board allow me to employ a competent and acceptable assistant for such analytical work and assaying as may be required, and to work with the students in the laboratory. Second—That during the last term of the coming year, or a portion of the same, a competent person be employed to give a course of lectures on mining. The appointment of a full Professor of Mining, without an assistant as above indicated, would give no aid to the Chair of Chemistry and Department of Agriculture, while the above plan would not meet the immediate demands of both. With respect to the agricultural grounds, I beg leave to refer the Board to my communication of May 5, 1870. I cannot express too strongly my conviction that their improvement for the specific purposes of agricultural and horticultural instruction and the organization of a labor corps of students to do the necessary work, on the plan adopted at Cornell, by the Universities of Iowa, Illinois and Wisconsin, and lately the new "Bussey School of Agriculture and Horticulture" of Harvard College, is of the greatest importance. I know of at least fifty students who would have been with us next year under such an arrangement; just such students as President White reports "among the best" in Cornell University. An Agricultural College without farm and gardens, sufficient for experimental purposes, at least,

would be like a chemical school without a laboratory. My own experience and that of Professors in every one of those thriving institutions founded on the Congressional grant is, that whenever the appointments of the Agricultural Departments or Colleges are made as complete as those of Letters, the most gratifying results have been realized. In conclusion, I would say that a strong desire is manifested on the part of the agricultural classes to see this department in effective working order, and among them are found some of the most devoted and zealous friends of the University. Respectfully submitted.

EZRA S. CARR, Professor.

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UNIVERSITY, Sept. 3, 1872.

*To the chairman of the Committee on Buildings and Grounds*—DEAR SIR: Unless some preparation is made very soon for begining the agricultural work at Berkeley, with the coming season it must all go over until a year from this Fall, and the delay will be a serious check upon the practical operations for the following year. The Agricultural Professor ought to be on the ground by Christmas, at the latest. Will not the Board authorize the construction of houses and outbuildings for the use of that Department, and that the necessary surveys of the ground be carried forward early in the coming term. I am driven to urge the Board to this because I know that the sentiment in favor of developing the agricultural department in proportion to the others is strong in the community, and because we are so far behind every other institution of the same age on a similar foundation. Very respectfully yours, EZRA S. CARR.

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## WANTED A DEFINITE PLAN.

UNIVERSITY OF CALIFORNIA, Sept. 10, 1872.

*To the Honorable Board of Regents*: I have considered it my duty as Agricultural Professor to prepare for the work for my Department by informing myself accurately and in detail with regard to the scope, cost and results of similar work done in other colleges, and to compare this carefully with the experience of the best farmers, fruit growers and stock raisers of the State. The late E. D. Lewelling and other competent persons have examined every acre of the University domain, with regard to its capacity for special cultures. The plans herewith submitted are the result of careful studies and statements of practical men. If we are able to offer faciltities for the practical study of horticulture and agriculture during the next five years and adequately recognize the greatest industrial interests of Calfornia in our University, we ought to begin our preparations at once and be ready for the rainy season. The ornamental planting done three years ago shows how far our nurseries, orchards and arboretums might have been advanced had the Board authorized me to carry out plans submitted at that time.. I beg leave to represent to the Board the immediate and imperative wants of the department, with some suggestions as to the way of meeting them. First—We want a definite plan to work up to, year after year. We have not an acre too much if it is all utilized. I think all the ground not required for general purposes walks and drives, should be included in this plan. Not less than fifty acres, in my opinion, should be used for orchards and for horticulture. Second—Suitable buildings, of which the residence of the Horticultural Professor should be one. If the Board would appropriate the amount intended for a single residence, allowing it to be used in erecting a dwelling adapted to agricultural and horticultural work, built as cheaply as is consistent with convenience and durability, and put up a plant house or houses in connection with it, I think the present needs in that direction would be provided for. The situation of these is a matter of great importance. Third—We need a small beginnnig in the way of teams, implements and stock. We ought to furnish milk and vegetables for the University, and should be able in three or four years to show as much specimen stock of the best breeds as the farm will support. In order to have live fences growing, in order to fasten to the University the interest and good will of a large class of our citizens, and to attract students by a labor system which will from the start employ and encourage them, I ask the Board

to authorize me to make the necessary beginnings, making such appropriations as they deem prudent and just. I could wish that every item of this expenditure should commend itself to the judgment and good sense of farmers and practical men, and that Berkeley farm-house and its appurtenances might be a model of cheapness, good taste and utility.

I respectfully ask that I be allowed an opportunity to present to the appropriate Committees the plans in detail, and to compare them with those adopted and approved in other institutions.

Respectfully submitted, E. S. CARR.

PROFESSOR BOLANDER TRIES TO GET THE BOARD TO DO SOMETHING.

No such opportunity to appear before the Board was ever afforde me. I sent to each of them copies of an address upon the claims and condition of industrial education, which embodied the most important facts in the history of Agricultural Colleges elsewhere. As stated before, the special studies in agriculture, and agricultural chemistry commenced with the beginning of the University year, 1871–2, under the administration of President Durant, whose interest in the Agricultural College was ever my best encouragement. His report to the Department of Agriculture for 1871 gave a respectable showing of our educational work. During this year I gave a course of two lectures a week to the agricultural class upon the Chemistry and Physics of Agriculture, three a week to the third University class on Chemistry, as the previous year (see Com. of July, 1871), one lecture a week to the fourth class (as per curriculum) on Physiology and Hygiene during the first term. This gave me for the first term of the year six lectures a week, and for the remaining two terms five, nearly all of which were experimental requiring from two to four hours in their preparation. My roving commission occupied Saturdays and every day of the short vacations. I was discharging, as best I could, the duties of two chairs without assistance, and without a cent of extra appropriation for expenses or salary. Through the collegiate year 1871–2, the Regents say (in their report) that they maintained the "College of Agriculture" with no "diminution of its curriculum and with increased advantages." I felt and still maintain that my instruction was the only distinction between the College of Agriculture and that of Letters, and that its advantages were not increased by adding to my other duties those of another Professorship. At my urgent personal solicitation, Mr. Bolander, an *ex-officio* Regent, again called the attention of the Board to the importance of commencing experimental and practical work upon the grounds. I furnished him a copy of my communication of May, 1870, which he modified as follows, and presented at a meeting of the Board in July, 1872. (See *California Teacher*, August 1872, p. 66):

Mr. Bolander recommended that the Board of Regents locate immediately such portions of the University domain as are to be devoted to agriculture and horticulture, and cause the same to be accurately surveyed and mapped.

1. For an orchard of specimen fruits of all kinds likely to be successfully and profitably raised in some portion of this State, at least five acres.
2. For vineyard, mulberry, textile and oil-producing plants, four acres,
3. For culinary vegetables and small fruits, two acres.
4. For the cultivation of all kinds of useful fruit and shade trees, ten acres.
5. For the cultivation of indigenous and foreign and medicinal plants, one acre.
6. For the culivation of all our native arborescent plants, to serve as a practical introduction to the study of botany for the students, three acres.

1. That an annual appropriation of $500 be made for the purchase ot all kinds of seeds of our indigenous vegetation. These seeds shall be used for exchanges with foreign institutions of a similar nature.
2. That an annual appropriation of $500 be made for the purchase and introduction of fruit trees not existing in this State.
3. That an industrial museum be established, with a Phytochemical laboratory, to test the usefulness of plants.
4. That a greenhouse and a small propagating house be erected.
5. That a competent and scientific gardner be employed to lay out the grounds and take charge of the entire work.
6. That the perservation, drying and packing of all kinds of fruit be made a special subject of investigation.
7. That vinegar and wine making, silk culture, distillation of volatile oils, and paper making be taught in connection with agriculture and horticulture.
8. That it shall be the duty of the Professor of Agriculture to supreintend all operations connected with the experimental gardens, to open correspondence with acclimatization societies and institutions of like purpose in foreign countries, and to report annually to the Board of Regents on the progress and conditions of the gardens. These reports shall be published at once and distributed at large.
9. That the students be allowed to work a certain length of time during the day, and be compensated therefor,
10. That the surplus of plants raised be distributed throughout the State, to such farmers and persons who are willing to plant the same, and to report annually on their condition.
11. That regular daily observations be made on climatic changes.

These resolutions were temporarily laid on the table. On the 3d of September I again ventured to urge the prosecution of this work upon the Chairman of the Committee on Buildings and Grounds (Dr. Merritt), and again upon the Board, September 10th. At a meeting of the Board, September 18, 1872, Mr. Bolander's resolutions were ordered placed on file, and, on motion of Regent Bolander, "the Building Committee were authorized to have a greenhouse constructed at an expense not to exceed $500," and it was also resolved that the Professor of Agriculture "be authorized to employ a gardener at a compensation not to exceed $100 per month." (See *California Teacher*, October, 1872, p. 133.)

### THE CIRCUMLOCUTION OFFICE.

I lost no time in asking to have the locations assigned for these purposes. But the Fall term of 1872 had given us a new President, D. C. Gilman, whose active duties were to commence with

the following Winter term. I ordered the mill work and sash for the greenhouse, selected a gardener, and waited for permission to "move on." Was advised to wait for President Gilman's directions. During his hurried visit to us before his inauguration I had laid before him the whole position of the Agricultural College, the promises I had been making the people concerning it, etc. I gave him the plans of the grounds, which embodied three years careful study of their soils, exposures and the cultures practicable for this locality. I also gave him the plans for the equipment of the rooms assigned to the Agricultural Department, on the main floor of the nearly completed Agricultural College building. At the laying of the corner stone of that building, the orator of the day, Rev. Mr. Stebbins, had spoken of everything which the University was to do except to make educated farmers and mechanics. The new President, in his inaugural speech, given November 7, 1872, on the "building of the University," found a place to compliment the geological survey, the *Overland Magazine*, even, but none for a word of encouragement to the young lady students who sat before him—none for the long delayed Colleges of Agriculture and the Mechanic Arts. I found it extremely difficult to get a hearing from the President on any subject connected with the practical development of the grounds. He constantly referred me to the Committee. If I went to the Committee on Grounds, or its Chairman, I was referred to President Gilman. Prof. Grey of Harvard, who was then planning and perfecting the Cambridge arboretum, was on this Coast at the time of Gilman's appointment, and had urged me, as everyone interested in these subjects had been doing for three years, to exhibit the great advantages possessed here for arboriculture. Thinking his opinion would have more weight than my own importunities, I asked him to write President Gilman as urgently as he could in this behalf. He replied to me from the Smithsonian Institution, April 14, 1873, saying that he would use "all the knowledge and influence he possessed to avert the danger of allowing our great opportunities at a critical period to pass unimproved." (See Grey's letter, quoted in "Regent's Biennial Report, '72–3," page 44.)

Meanwhile, during the early part of the planting season, gardener and greenhouse waited upon his decisions. Nothing whatever was done, until the acceptance by the Board of Mr. Nolan's donation, through me, of duplicates of every tree and shrub grown in his large nursery, and the appropriation of $400 to enable me to remove and set them out, compelled action.

STARTING AN ARBORETUM.

Before the 1st of April I had plowed and subsoiled the part of the grounds upon which permission had been given me to plant the Nolan collection, had planted eighty species of coniferous trees, thirty of eucalyptus, twenty-seven of acacia, and a very large collection of deciduous trees and shrubs, the additional gifts of Messrs Hoag and Williamson of Sacramento, Sanderson of San Jose, Mr. Kelsey of Oakland and others, in all three hundred species and seven hundred specimens. As far as soil and exposure would admit they were planted in accordance with their natural orders, the pines, firs, cypresses, etc., forming distinct sections. Spaces were left for foreign allies. Each plant was labeled with the scientific and common name, habitate and a number corresponding to that on a catalogue, in order that the rate of growth, size and other important facts could afterward be determined. The publication of Dr. Bolanders recommendations, with similar items, called out equally generous offers from other prominent horticulturalists. Mr. Lewelling of San Lorenzo offering us duplicates of the varieties in his extensive orchards ; Mr. Nicholson and other vineyardists of their vines. Consulting the President, I was advised "to decline these gifts for the present year at least, there being absolutely no money at command for these purposes." Observe here, that I had been authorized to employ a gardener at $100. a month, which I had not done, simply because I was not authorized to provide him with tools, manures, etc., or to locate the ground for his operations, and had not used a cent of that appropriation. During my entire incumbency the sum of four hundred dollars has been expended under my direction. The sum of $20,964, was expended during this term by the Committee on Buildings and grounds, under the direction of their Chairman, Dr. Merritt, for ornamental improvements having no reference to agriculture or horticulture.

The University site was laid out for the College of California by Fred Law Olmstead of the New York Central Park. The present roads, etc., were made on that plan. At the time of my appointment Mr. Lowe of San Jose was laying out the grounds as a landscape garden, without any reference to the requirements of an Agricultural College. William Hammond Hall, landscape engineer of San Francisco, is understood to be now employed in developing those grounds as an educational park. His plans will require an expendature of $40,000. for the next two years, while competant experts estimate the cost when finished to be not less than $80,000. The plan speaks for itself; it is worthy of praise for its æsthetic or ornamental uses, and for these alone.

That the Regents have not seriously contemplated the utilization of any considerable part of those grounds is evident from the sale of an important portion (112 acres), from their official announcements, from the unnecessary delay and virtual indorsement of the most costly and purely ornamental plan which has been submitted.

### THE GILMAN UNIVERSITY.

Soon after the inauguration of President Gilman it became evident that he had not only no sympathy with the Agricultural College, but that he would use all his influence to divert its means into other channels. He pronounced the organization so carefully studied by acting President Le Conte as "extremely faulty and defective," and in the Register, soon after published wiped out the College of Agriculture, as such, making an agricultural "course of study" one of several not essential to any degree conferred by the University. So marked was this change that when the head of the Agricultural Department at Washington wrote to me for the statement of the condition and progress of our Agricultura College, to include in his report to Congress for 1872, and I replied by sending the register (not feeling authorized to speak for the President or Regents), he immediately replied: "What I want is a register or catalogue or other document concerning your Agricultural College. Please fill the enclosed blanks, answers to specific questions which will give the desired information." I gave the letter and blanks to President Gilman, with a copy of the previous report made under President Durant.

When the Agricultural report was distributed the information concerning our Industrial College of Agriculture and the Mechanic Arts was confined to two brief paragraphs, as follows: "The most important change made in this College during the present year is the election of Daniel C. Gilman, President of the Univesity." "President Gilman is a graduate of Yale College, and was for several years Professor in the scientific school of that college. He has spent some time in Germany in the study of science in Berlin. His inaugural address was delivered at Oakland, November 7, 1872, and is replete with practical observations on the principal and character or the education which our republic demands." "The farm has not been improved," etc. "Students are not instructed in agriculture outside of the schoolroom." (See Agricultural Report for 1872.)

### THE NEW MORRILL BILL.

About this time the proposition to give large additional grants of land to further endow such Colleges as had complied with the

terms of the former grant was brought before Congress. The passage of the new Morrill bill would give us an additional income of over $30,000 per annum: but its conditions were exceedingly stringent, and under it many of the abuses which had prevailed in the execution of the former bill would be remedied. The sale of lands and care of accruing funds was to be left in the hands of the National Government.

With the first publication of Morrill's new bill on this coast an article appeared to show that the object of the former bill was not to promote industrial but general scientific and literary training. I replied controverting the position, and set myself more earnestly than ever to meet the requirements of the new grant by proving our good intentions by some good works. The time was drawing near for the removal of the University to its permanent home at Berkeley. The Professors appointed before 1872 had each been promised residences free of rent, and this promise being renewed I asked for the erection of a plain farm house, with suitable outbuildings, for my own occupation, that I might economize time by giving my personal supervision to the work of my department. I was informed that houses would be built simultaneously with the College of Letters. Packages of choice plants, seeds, etc., were frequently arriving, for which I could get no care or protection. In the summer of '73 beds of ramie, jute, etc., a very choice lot of vines, and the most complete collection of flowering bulbs which has ever been made on this coast were destroyed by pigs. No part of the grounds were excluded from public intrusion, and no part was set aside except for picnic purposes. It should be remembered that all this time a larger sum of money than I had asked for was employed for the care of the grounds under Dr. Merritt's directions.

### THE HAYSEED DIPLOMAS.

At the "Commencement" of 1873 the students of what under the administration of President LeConte and Durant had been a College of Agriculture completed their prescribed four years course and presented themselves for graduation. Fair parchments of handsome size, engraved and decorated, bearing the signatures of all the Faculty, awaited the students of the College of Letters. Small sheets of paper parchment, more like school certificates than college diplomas, signed by President Gilman and three members of the Faculty, were presented to the graduates in Agriculture. The students were justly indignant, but were somewhat mollified by finding that this had been done without the knowledge or consent of their late teachers. This agricultural experiment was not repeated, the Diplomas having

told their own story before the Legislative Committee in connection with other evidence taken.

AGRICULTURAL COLLEGE RUN INTO THE GROUND.

The University year of 1873-4 was to open at Berkeley. The distribution of rooms for the use of the various professors who were to occupy the College of Agriculture had long before been made, by common consent of the Faculty and Building committee, and appropriate fiittings and furnishings were either completed or in progress, when the President informed me that the rooms designed for the agricultural department would be required for other purposes. All my plans for exhibiting rare and valuable plants and conducting experiments to which light and heat were essential where thus summarily overthrown by relegating the accomodations into the north end of the basement. I remonstrated strongly; said "I should be ashamed to take the farmers of the state through the buildings and exhibit such accommodations for the Agricultural College." The paragraph on page 69 of the Regents' statement to the Joint Committee of the Legislature is untrue.

My remonstrances were made to the President, as my communications usually were after his appointment. If the Board never received "any expression of my wishes," it was not my fault. The Regents say (also on page 68 of their statement) that "on the removal to Berkeley the sum of $500 was placed at my disposal to secure the aid of competent lecturers during the year in matters of practical agriculture." This is not true. I never heard of this except in the pages referred to, and never knowingly had a cent at my disposal for these purposes. (See following letter to Regents April 6, 1874.) I did what I could to make the basement rooms assigned to my use presentable before the visit of the Legislative Committees, occupying the holidays in furnishing them with my own library and collections. The lecture-room, without fire, was exceedingly cold and damp during the rainy season.

THE GRANGES AND MECHANICS TAKE UP THE MATTER.

In the Winter of 1873–4 a Committee of the State Grange and Mechanics' Deliberative Assembly respectfully memorialized the Legislature on the subject of the Agricultural and Mechanic Arts Colleges. The Committee spoke approvingly of what had been done in other directions, and asked, in addition to the appropriation for current expenses, that the sum of $135,000 should be specifically appropriated to the practical work of the Agricultural and Mechanical Colleges. The President and members of the Board visited Sacramento, and by addresses, personal

efforts and newspaper articles and pamphlets endeavored to show that the memorialists were in error and that Agricultural and Mechanical Colleges were failures. Several Committees from the Legislature visited Berkeley to examine into the administration and workings of the institution, and with singular unanimity, reported in favor of the memorialists. The Education Committee, in their report took issue with the President on his presentation of the Industrial College. Learning that I was accused of having furnished these Committees with information, and as the matter of University reform was getting mixed up with the Merritt investigation, I made an explanation to the Advisory Committee of the Regents, no testimony from me having been called for by any Committee of the Legislature up to that time.

I showed them that I had no connection whatever with the Legislative proceedings in the matter, except such as have necessarily resulted from the kind of service in which I have been employed; that while I had endeavored to carry out the intentions of the Board, as first explained to me by Regents Tompkins and Fitzgerald, and afterward by formal resolutions and instructions, I had as faithfully represented the sentiments of the people to them, and had repeatedly placed before them in writing the measures which had been urged upon me as important to secure a cordial feeling toward the University and its work; that I had had every reason to believe that the manner in which I had represented the aims and objects of the University were approved by the Regents and by the public; that I had been placed without intention on the part of the Regents in the difficult position of reconciling the various published announcements of the Regents with the dormant condition of the Agricultural College, and that I had been placed before the public in the position of apparent responsibility without the power to meet it. Of this, the resolution authorizing me to employ a gardner, without providing materials for the prosecution of his work, or locating grounds for his operations, was an illustration. In conclusion I said: "In the peculiar relation which the transference of the Agricultural College 'from the closet to the field' has placed me toward the people of this State, I have neither been disloyal to their interests nor to yours, but have always acted on the belief that these were identical. If loyalty to the interests of industrial education, to which I have given the best years of my life, and mean to give what remains of it, is treason to the University, or if it is so construed by your honorable body, I must plead guilty to the charge."

Meanwhile the Regents (February 17, 1874,) memorialized the Legislature for another Committee—a joint Committee—with power to send for persons and papers, etc., to inquire into the defects of their stewardship and the proper remedy. The Committee arrived on the 22d, sent for the Professor of Agriculture, who was brought before them and sworn, but before any testimony was taken, an adjournment was made to Sacramento, at the request of the Regents, the Committee deciding, first—to receive the statement of the Board Committee, Regents and President, winding up this stage of the investigation (?) with a banquet at Regent Ralston's.

At this juncture, the Professor of Agriculture was informed that the Regents contemplated his summary removal on the ground of disloyalty to his employers. The charge of incompetency was not made. The Secretary addressed to me a letter of inquiry as to what, in my opinion, "was feasible for the improvement for instruction in agriculture and horticulture," as if no suggestions on that subject had ever been presented to them. I replied by referring them to former communications, with some new suggestions; all of which was embodied in their "statements" dated March 3, 1874, and published in pamphlet form. (See pages 14, 15 and 16.) The House Committee on Education had reported favorably to a change in the Management of the University, on the ground that the various callings, interests and sections of the State were not represented in the Board, eighteen of its twenty-two members being lawyers and business men having their offices in San Francisco. The Committee said, "All admit that the Professor of Agriculture is not only a scientist, but a thoroughly practical instructor. He should live on the ground, and students should be allowed to labor, thereby applying science under the direction of their instructor."

### THE SUBJECT OF MANUAL LABOR.

Had been repeatedly brought before the Board, both before and after our removal to Berkeley, by the application of students for work, the favorable testimony of other institutions, notably Maine, Massachusetts, Michigan and Illinois, and in various other ways. President Gilman invariably discouraged it in all my intercourse with him, and the little work which students have been permitted to do has had no connection with agricultural instruction. I shall show in another place that I spared no pains to call attention to the requirements of the law in this respect. The Legislative Committee were strongly in favor of its immediate adoption.

ARE THE REGENTS HONORABLE MEN?

Near the close of the legislative session the House Committee on Education reported a bill embodying their views of the changes to be desired, etc. The disposition of the bill will be seen from the following communication from its chairman, A. Higbie, to W. H. Baxter, one of the Grange memorialists, after the Regents had asked for my resignation. Under date of July 30, 1874, he says: "When the bill, proposing a radical charge in the Board of Regents was introduced and referred to the Committee on Education, Regent Dwinelle and others were very active for its defeat."

"I had a lengthy conversation with Dwinelle, in which he admitted that he and other Regents had been opposed to Professor Carr; but since the investigation of the University matters before the Committee at Sacramento, he and other Regents were fully satisfied with him, believing that the cause of the difficulty and disaffection was found in Professor Swinton. While he admitted the justice of the bill, he thought that enough had been said and done for one session. I replied that too much had already been said and done, and that he was one of the active parties: that he had threatened to a member of the Committee on Education that Carr had to go out—meaning, as understood, that the Chair of Agriculture would be vacated. I further stated, that the people, the Committee of Investigation from both Houses, as well as the Committee on Education were not satisfied with the management of the University, and especially with the Agricultural Department; therefore the proposed plan to select Regents representing the various callings and interests of the State. He replied, "We now understand things better than we did, and I pledge you my word on my own behalf and on the behalf of the Board of Regents, that no attempt shall be made to remove the Professor of Agriculture only for such causes as would remove a Professor from any Chair." My reply was, "Judge, if you feel free to say that this pledge shall be faithfully kept, the friends of the bill will not urge it; if not, the bill will pass in less than one hour." Said the Judge, "I feel free to say that this pledge shall be kept." I replied, "I hope it will, not only for the benefit of the Agricultural Department of the University, but for the credit of the Regents."

"In a few moments after this conversation with Regent Dwinelle, Alfred A. Cohen of Alameda sent for me, wishing an interview with me on the same subject, viz: Professor Carr and the Chair of Agriculture. Our conversation was very much like that be-

tween myself and Regent Dwinelle. He said he was prepared to say to me that the pledge made by Dwinelle should be faithfully kept, in case the friends of the new bill would not urge it. My reply was, "*Omnia justicia.*" So the friends of the bill, thinking that the results contemplated therein, viz: justice to Professor Carr, and a more careful consideration of the College of Agriculture, would be secured by the action of the Regents under these pledges, concluded not to urge it, predicating their action on the pledges made by the gentlemen just named."

QUESTIONS SENT BY CONGRESS.

While these questions were pending I received, between the months of December and April, several urgent requests from Commissioner Watts, of the Agricultural Department, at Washington for the necessary information to fill the report from our State for the general account of the Industrial Colleges in his forthcoming volume. The two first I gave or sent to the President and so stated to the Commissioner. The third said: "I have written to President Gillman and received no reply." Still more important were the questions sent by Congress through the Chairman of the Committee on Education and Labor, James Morrow.

State what is the total value of the property of your institution.
State the cost of each building and the uses to which it is put.
State from what fund, national or other, each building has been paid for.
State what amount has been expended from the years 1862-1874, inclusive, for—

An an experimental farm—class "A."
A machine shop—class "B."

State what, under class "A," has been the total expenditure for actual instruction in—

Branches relating to agriculture.
Theory and Practice of Agriculture,
Chemistry applied to Agriculture.
Botany, Horticulture and Forestry.
Animal Physiology, Zoology and Breeding of Animals.
Veterinary practice.
Economic Entomology and insects injurious to vegetation
Field surveying, leveling, and mathematics pertaining thereto.
Irrigation.
Geology, general and agriculture.
English language.
Physics and Natural Philosophy.
Moral Philosophy.
American and Modern History.
Social and Sanitary Science.

State under class "B," what is the total expenditure for actual instruction in branches relating to the mechanic arts, as follows:

Dynamical engineering.
Mechanical engineering.
Theory and practice of machine construction.

Mathematics applied to machine construction.
Mechanical draughting.
Free hand industrial drawing.
Chemistry applied to manufacturing, mining and metallurgy.
Physics and natural philosphy.
Building and architecture.
Mining processes and methods.

State what you have for necessary equipment in branches relating to agriculture, viz:

Fine stock, implements and machinery, models, veterinary, surveying and leveling instruments, etc., etc.

State the annual and total investments on account of your experimental farm and machine shops.

The Professors have also been called upon to state what amount of instruction and expenditure is bestowed upon branches other than those of Agriculture and Mechanic Arts in the several institutions; the names, titles, duties and salaries of President and each Professor; what is the amount of income derived from donations and legacies; the total income, number of students, and number in each course; subsequent occupation of students as far as known; and, finally, "Has your institution in good faith performed all the conditions and requirements of the statute of July, 1862, and the Acts supplementary thereto? If not, state for what cause," etc. As I could not state "for what cause"—having no knowledge of the real state of the finances, and the Regents having given want of means as the only reason for delay, I referred the Congressional questions to them. I have since been informed that no satisfactory replies were made. The questions indicate what the National Government expected the Agricultural and Mechanical Colleges to do and teach.

During this time, my old colleagues in the efforts to secure the original grant were writing from Missouri, Wisconsin and Illinois, urging me to help in procuring the proposed new benefaction. Though I felt that we were not meeting reasonable expectations. I was unable to prove it, the Regents contradictory and self-condemning statements not having then appeared. Hence, I left it with the Regents to clear or convict themselves before the Legislatures of the State and Nation, hoping by this course not to jeopardize the appropriations from either source, or to fail in giving the Regents the benefit of every doubt.

### LEGISLATIVE APPROPRIATION.

The Legislature appropriated $50,000 for the current expenses of the two following years, and $30,000 for the practical development of the Agricultural and Mechanical Departments. After the adjournment, Mr. Moulder resigned the office of Secretary and became Land Agent. The law requires that "a

practical agriculturist must be chosen by the Board." R. E. C. Stearns, an estimable gentleman and scientist of San Francisco, late Clerk of the Harbor Commission, was chosen at Mr. Friedlanders urgent request. A vacancy occurring in the Board, D. O. Mills, late President of the Bank of California, was appointed by Governor Booth, though Mr. Ralston, President of the Bank and Treasurer of the University, was already a member. The other vacancies occurring during the year were filled by Governor Booth in the appointments of J. Mora Moss, whose term of service will be twenty-two years; J. W. Winans and J. M. Hamilton. Upon the adjournment of the Legislature, Mr. Higbei, late Chairman of the Educational Committee, called upon and informed me that my way had been made straight by the action of the Committee, and that no further obstructions would be made to the progress of the Agricultural Department. I therefore sent another communication to the Board, with respect to gardener, etc., as follows:

UNIVERSITY OF CALIFORNIA, April 6th, 1874.

*Gentlemen of the Board of Regents*, I see from the "Statement of the Board of Regents (page 68) that on the removal to Berkeley, the sum of $500 was placed at the disposal of the Professor of Agriculture to secure the aid of competent experts as occasional lecturers during the year, as this is the only intimation I have ever received of this action, I would respectfully ask for further information, and especially whether it is desired to have such lectures given during the present collegiate year."

Allow me to state that the services of a competent gardener, and of a very well trained assistant for general work in gardening are at command whenever the Board are ready to authorize the prosecution of the work discontinued last year. If the grounds for practical operations, propagating house, etc., have been located, I have not been informed of it. Valuable seeds have been sent from European Agricultural Stations, which will be worthless unless used the present season. It is very desirable to obtain for experiment a few of the more valuable timber trees of the east, and this is the proper time for sending them. I should be gratified to have the ground immediately contiguous to the agricultural or south college building prepared for ornamental planting, (that being the only point where water can now be commanded) in such manner as will not obstruct the view or require after modification. Nothing will grow in the drift material with which the original surface has been covered to the depth of several feet, *except the coarsest weeds.*

"I have received from the Chairman of the Committee on Education and Labor," in the House of Representatives a request for a statement of our condition and progress in practical operations, and from other sources we are informed that a Congressional Committee will probably visit all the institutions which have received the benefit of the grant of the National Government sometime during the summer. Wishing to make as good a showing as possible, and realizing that the working season is nearly over for this year, I will make no apology for asking early attention to these subjects on the part of the Board."

Respectfully yours, E. S. CARR.

## SECRETARY STEARNS' REPLY.

### OFFICE OF THE BOARD OF REGENTS.

{ UNIVERSITY OF CALIFORNIA,
{ SAN FRANCISCO, April 17th, 1874.

*Ezra S. Carr*, DEAR SIR.—The Committee to whom was referred your recent communication to the Board of Regents, would like to have you give them in writing some additional data, in order that they may be able in the most complete and satisfactory way to bring the subject of Agricultural Education before the Board. First.—Will you give them your plan for out-door work—stating it in as much detail as possible so the Board may understand just what you would like to see done when the outlays you ask for are authorized. Second.—Will you state what improvements if any you would like to see made in the indoor instructions pertaining to Agriculture. Third.—Will you suggest the names of persons whom you would like to have secured as lecturers in the special cultures to which you have referred. In your reply you need not feel restricted in space—but rather at liberty to open the whole subject as freely as possible. The communication of any printed documents on the subject of Agricultural Education elsewhere will be acceptable to the Committee, and especially some facts respecting Agricultural Experimental stations in Europe. The Committee will meet again on Tuesday morning when it is important to receive your reply. The Board has received the communication which you refer to from Washington, and propose to make an answer to it. Respectfully yours,

ROBERT E. C. STEARNS, SECRETARY.

This application for information, and printed documents on the subject of Agricultural Education to an incompetent party, by those who know so well what Agricultural Education is at home and abroad, and who as stated, by Governors Booth and Haight on the 11th inst., had decided "long ago" to remove said party, was promptly answered.

OAKLAND, September 19th, 1874.

R. E. C. STEARNS, SECRETARY OF BOARD OF REGENTS.

Yours of the 17th inst. is received. In reply I would say that very careful detailed studies were made of the entire University domain with reference to its capacity for Agricultural and Horticultural purposes, in the year 1870 and 1871, in which I was assisted by Elisha Lewelling, Mr. Hart Hyatt, and other special culturists whose long experience on this coast and great success entitle them to be considered authorities on these subjects. The lands then owned by the University and afterwards sold to Mrs. Brayton were regarded as well adapted to the purposes of an experimental station or farm on account of the sheltered position, water supply, etc. Mr. Lewelling was then a member of the Legislature, and believed it practicable through public and private donations to bring the University domain up to six hundred acres, "little enough" as he expressed it, "for a great State like California." He and many others with whom I conversed about the Agricultural College looked to the enlargement of the domain as necessary." "The plans and studies referred to, including the kind of soil, exposure, drainage, etc., of this and contiguous parcels of land were necessary preliminaries to intelligent work, if we should carry out the principles which have generally been adopted elsewhere. I did not consider that we had land enough to carry on stock raising to any great extent, but was satisfied that with that exception, we could do all that is essential to a thorough Agricultural education on the property then owned by the University. After the sale of the portion lying up and along Strawberry Creek, and the death of Mr. Lewelling, my efforts were chiefly directed to carrying forward the *Horticultural* and experimental work; *on a smaller scale* and mainly to the following points. [See Appendix, a.]

First.—*A specimen orchard*, (see my communications to the Board of Regents 1870 and 1871,) and also the enclosed statement of School of Horticulture of Illinois Industrial University.

I wished this orchard to display all the various methods of *training* trees, as standards, or on espaliers and supports, and to have it contain one or more specimens of every kind of fruit or nut which can be grown in our climate without artificial heat. Second.—*A Garden of Economic Botany*, in which a few specimens of all useful plants should be arranged as in one section of the Garden of Plants at Paris, *i. e., according* to their uses as dyes, textiles, medicines, etc., (an excellent description of this is given in Robinson's Parks and Gardens of Paris.) I have received lists of these plants from Professor Milne-Edwards, the director in chief. Third.—*An Arboretum*, and Botanic Garden which while forming a part of the ornamental planting, would also form a grand collection of trees and shrubs, like that to which Dr. Grey of Harvard College is now giving his exclusive care, and to which one hundred acres of the most valuable property is devoted. I would have the aboretum so arranged and catalogued that the visitor or student could go through it as through a picture gallery, determing the rate of growth, uses and other important facts concerning each species. Fourth.—To make a beginning in Forestry, by rehabilitating the hill land, as soon as a water supply is provided. By putting in Redwood and Fir trees near the reservoir and distributing points, and enlarging from these centers year by year we should be able to re-clothe the hills without continued irrigation. The grounds allotted to these purposes should not be obstruded upon more ornamental portions, but they should be convenient of access both to students and visitors. I shall greatly regret, if the requirements of an "Educational Park" prevent the adoption of plans which I have previously submitted, not because *they are mine* but because they embody the views of the highest auth rities in practical and æsthetic horticulture, which I have been at great pains to obtain. Messrs. Wilder, Downing, Ellwanger and Barry of Rochester, Mr. Robinson of the "Garden" and many other experts, Patrick Quinn, the most successful small fruit enlturist in the country, have each given to me *on the spot*, the benefit of their judgement and experience. *With entire unanimity*, the grounds on both sides of both ravines, including from two to three acres above their confluence, (leaving a chance for the future excavation of a small lake or pond *at that point*) *down to the west line of the domain*, has been considered as the best adapted to Agricultural and Horticultural work. Nearly all the parties referred to have suggested the desirableness of enlarging our borders in a westerly direction. If roads of importance must traverse this part of the domain, I would conceal by plantations the ruder and more experimental plots, orchards and gardens would need no other concealments than enclosing hedges, which I would have exhibit all our best hedge plants, native and foreign. One of the most beautiful objects in California is the wild Cherry hedge of Mr. Wheeler of San Mateo, now fifteen feet high. Such hedges, following by curved lines the natural divisions of the surface could not mar the general effect. So of avenues of walnut, olive or fig trees. The exact permanent location of grounds for these purposes, as well as those more strictly Agricultural, having been determined by the Board, the work I would recommend for the next two years would be as follows:

First.—The immediate organization of a students labor corps into two divisions. First.—The *Educational division*, where the labor is applied directly in connection with Agricultural and Horticultural instruction. And Second.—The *Remunerative division*, employed in grading and such work as has hitherto been employed at a cost of from four to six thousand dollars per annum. Both these divisions should be enrolled for regular work, not to be remitted without excuse, either for two hours a day, or four hours on alternate days, (see document of other colleges) and to be performed under the Superintendence of the Agricultural Professor and Gardener in the one case, of the Secretary or other responsible officers in the other. For each day's work the student should receive a check to be paid on presentation to the Secretary at the end of the month or term.

Second.—I would have all the land assigned for *Agricultural and Horticultural* purposes ploughed deeply and well, *this spring*, for eradication of weeds, and of gophers and squirrels who destroyed last year more than it would cost to exterminate them. I would have this ploughing repeated in the fall, using such fertilizers as may be advisable, preliminary to the permanent orchard work.

Third.—I would have the propagating house already provided for, put up in connection with the farm-house, in case the latter is occupied by the Professor of Agriculture, for the sake of economy and protection. I would have both these erected as soon as practicable. The plan of farm-house submitted last year to Messrs. Power and Ough, they estimated to cost $4,000. House, small barn and fence for barn yard to cost $4,500.

Fourth.—The Educational labor corps I would first employ in finishing and planting the border around the Agricultural College, that it may be completed before Comencement. Then, in laying out beds, walks, etc., in Economic garden and in work on orchard ground. I would have a hundred thousand seedlings and cuttings prepared for use another year. The other labor corps I would employ in grubbing out poison oak, in grading, clearing out grounds along the banks, care of present plantations, road work etc., in the mechanical work of making gates, rustic bridges, fences, etc., *thus making these two departments complement each other.*

Fifth.—I would put a narrow coping of brick or artificial stone (a good specimen of which may be seen at Mr. Spaulding's place, in Oakland,) laid around the Agricultural College, within which I would have a variety of choice bedding plants. As soon as the grading is finished, I would have the ornamental planting around both edifices pushed with vigor, water being accessible at these points. I would have preparation made for sowing a lawn of moderate extent, at the proper season.

Sixth.—I would employ Robert Turnbull as gardener as soon as his services can be obtained, and Wm. Brennan as laborer, forthwith. I would employ no other work of outsiders, except for teaming and ploughing as a temporary expedient.

In respect to indoor instruction, I would like to have Dr. Wm. Gibbons, of Alameda, give from four to six lectures on insects injurious to vegetation, *this term*; also to secure (later,) two lectures from Mr. Livingston Stone, on Fish Culture in California, and two from Dr. John Strentzel, of Martinez, on the culture of the Orange and the Fig. One or more from Prof. Bolander, on Indigenous Grasses would be very acceptable. This would do for the present year.

Next year, in addition to the foregoing, we ought to have six lectures on Vineyard culture and wine making, and a short course on Veterinary Science. I am not prepared to suggest names, but will do so, hereafter, if desired.

We ought also to have instruction in Descriptive Botany, from some one familiar with the Flora of this coast, and I feel assured, that with this and the special lectures provided for, and the holding of a Farmers' Institute, we shall create a warm interest in the Agricultural community and increase the number of students.

I enclose the last pamphlet from Illinois Industrial University, the Massachusetts Agricultural College, plans of grounds and a copy of the last Department report. Also, a request now made *for the fourth time* from said Department.

It is certain that Agricultural Stations do not obviate the necessity of Agricultural Colleges, on the broad bases of that at Hohenheim, Wurtemberg, (see p. 144 of Dr. Hoyt's enclosed report,) or of Illinois and Massachusetts Agricultural Colleges in our own country, but meet *local* demands for both experiments and instruction. They are becoming more and more specially related to local industries, such as the beet sugar, for instance. (There are forty stations in Germany for beet sugar alone,) I hope we may see three or four such stations on this coast, connected with wine, silk, and sugar manufactories, and I hope to demonstrate their utility in our University work.

Regretting that time does not permit me to gather more information for your immediate use, I remain Very cordially yours, EZRA S. CARR.

This communication was accompained by a carefully prepared agricultural and horticultural map of the grounds, with estimates of the cost of farm building, out-houses, implements, team, materials, labor, etc., limited by the legislative appropriation for these purposes as follows:

| | |
|---|---|
| Building and outhouses, exclusive of propogating house | $5,500 to $6,500 |
| Team and implements | 1,500 to 2,000 |
| Stock for garden and grounds | 1,000 to 2,000 |
| *Labor* of all kinds for Agricultural, Horticultural and Botanical purposes, including gardeners', students' and other labor, exclusive of grading roads | 6,000 to 8.000 |
| Incidentals | 1,000 to 1.500 |
| | $15,000 $20,000 |

It will be remembered that the Legislative appropriation for practical purposes was $30,000. Had the mechanical labor of students been employed on buildings and propagating houses, as recommended, the above estimates would have been sufficient, in case either the larger or smaller total expenditure was reached.

A few days later Mr. Ellis of Sacramento, was appointed gardener, with a salary of $125 and a promise of increase, a matter about which I had not been consulted, and the Secretary afterwards informed me that he was expected to take charge of the agricultural and horticultural work ubon the grounds, thus relegating my work to the class room and the duties of my roving commission.

### PROFESSOR GILMAN'S SECRET EFFORTS.

From that time until commencement I heard nothing further from the Regents. There has never been the slightest discension among the Professors. Between some of them and President Gilman a coolness existed, natural for men to feel who were aware of his secret efforts to remove them, but he has ever been considerered more an officer of the Regents than of the Faculty. At his invitation I breakfasted with him on the morning of Commencement day, without an intimation of any contemplated changes in the Agricultural Department. The next afternoon, July 23d, he took part in a meeting of the Regents, secret of course, at which it was resolved to establish eight agricultural lectureships, to be filled by four experts within the State and four from the East. The sum of $5,000 was appropriated to defray the expenses. A Student's Loan Fund was also established. Mr. Stebbins then proposed to vacate or abolish the Chair of Agriculture, which, being strongly objected to by the new Regent, J. M. Hamilton, Master of the State Grange, was dropped for the time and another resolution substituted requesting me to resign. The following morning President Gilman left for the

East. Eight days after, the Secretary informed me of this action in the following communication:

*Prof. E. S. Carr:*—At an informal meeting of the following members of the Board of Regents, July 23, your resignation was requested by the Regents, whose names are given below:

| | | | |
|---|---|---|---|
| Booth, | Hallidie, | Mills, | Winans, |
| Dwinelle, | Stebbins, | Martin, | Swift, |
| Moss, | Haight, | Gilman. | |

*Nay*, Hamilton.

And I was requested to communicate the same to you.

ROBT. E. C. STEARNS, Secretary.

Oakland, July 31, 1874.

The Seretary also verbally informed me that if this request was complied with, my salary would be paid for the next three months.

Where the line of formality ceases in a meeting in which so much important business is transacted, it is as difficult to understand as it is the "well meant courtesy" of attempting summarily to vacate a chair, and failing in that, to force a resignation. I requested an investigation, the preferment of charges, etc., through Regent Felton, *and placed my reply in his hands*, as follows:

*To the Honorable Regents of the University of California*—Gentlemen: I have received, through your Secretary, the copy of a vote taken at an informal meeting of Regents Booth, Stebbins, Hallidie, Haight, Swift, Winans, Mills, Moss, Martin, Dwinelle and President Gilman, requesting my resignation and the negative vote of Regent Hamilton.

So great have been the embarrassments of my position under the inability or disinclination of the Board to develope the Agricultural College according to public announcements and the official programme under which I accepted the appointment, that I should have resigned long ago, painful as it would have been to sever my unexceptionably pleasant relations with the able and harmonious Faculty and students of the University, had I not felt a natural ambition to leave behind me some organized work as the results of my efforts here.

I especially wished to resign during the last session of the Legislature, but the repeated assurances of the President to myself, and the pledges of the representative members of the Board that these embarrassments should be removed, together with the consequent appropriations for the Agricultural Department induced me to forego my personal wish.

Having consented to remain only upon such assurances and pledges, I cannot now become a party to an action, which, without explanation, would necessarily reflect upon either my professional or personal character. An unquestioned reputation is the only heritage I can hope to leave my children at the close of a life devoted to instruction.

And, aside from all personal considerations, I cannot now comply with the request of the Regents named without an apparent abandonment of the cause of industrial education. I therefore respectfully, but positively decline to offer my resignation. Very respectfully yours,

EZRA S. CARR.

Oakland, August 6, 1874.

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THE NEXT MEETING.

A semi-officical notice of the next meeting appeared in the daily papers of August 12th.

The Board of Regents held a special meeting on the 11th instant, to settle the question of the Professorship of Agriculture. There were present: Governor Booth, Rev. Horatio Stebbins, William C. Ralston, H. H. Haight, J. Mora Moss, J. W. Dwinelle, J. West Martin, Sam Bell McKee, Louis Sachs, John B. Felton, D. O. Mills, M. M. Estee, John S. Hager, A. S. Hallidie, Lawrence Archer, Judge Hamilton and John F. Swift.

The Secretary notified Professor Carr of the views entertained by the Regents as expressed at an informal meeting held July 23d, but had not received any reply.

THE DEPOSING RESOLUTION.

Mr. Stebbins then, in behalf of the Advisory Committee, consisting of Messrs. Haight, Stebbins, Moss, Martin and Dwinelle, offered the following resolutions:

First.—For the purpose of giving greater efficiency to the Faculty of Instruction in the University in general and to the Agricultural Department in particular, which is impracticable without a change in the Professorship of Agriculture; and in view of the incompetency and unfitness of the present incumbent for the duties of that chair, the Secretary is hereby directed to notify Professor Ezra S. Carr that his services in the University will be dispensed with from this date, but that he will be allowed his salary for the present month.

Second.—That a Special Committee of three be appointed by the Chair, to consider and recommend to this Board the name of a suitable person to fill the chair of Professor of Agriculture.

After it had been decided to act upon the resolutions separately, Mr. Haight moved the adoption of the first and a discussion followed, participated in by Messrs. Dwinelle, Felton, Estee, Hamilton and others.

Mr. Hamilton declared that no specific charges had been made against Professor Carr; that there was only a general statement that he was incompetent, and that his removal would be looked upon by the farmers and mechanics of the State as a blow aimed at the mechanical and agricultural interests.

Mr. Felton joined Mr. Hamilton in opposing the resolution for the same reason, and insisted that if there were charges against him, they should be investigated.

Mr. Dwinelle said that he would not vote for the removal of Mr. Carr, because during the last session of the Legislature he had promised members that that gentleman should not be removed. Mr. Estee said his action might seem inconsistent, but he believed it inadvisable to remove the Professor in the present state of public sentiment upon the subject.

Governor Haight, Governor Booth, and other Regents, de-

clared that Professor Carr's incompetency was well known to all the Regents, and was too notorious to need any investigation; that his removal had been determined on long ago, and that it would be best for him and for the University that there should be no useless discussion or publicity.

A FUTILE ATTEMPT TO PROCRASTINATE.

The following substitute for the first resolution was offered by Mr. Hallidie:

*Resolved*, That the Advisory Committee is hereby requested to examine into and report to this Board any irregularities, insufficiencies or incompetencies that may exist, or may have existed, in the administration of any department of instruction in the University, and if in its opinion any changes should be made. The Committee is empowered to add to itself any additional members of the Board, to hold its sessions with open doors or otherwise, and to adopt such measures to further the public interest as their judgment may dictate or suggest, and to report the facts to the Board.

The substitute was defeated by a tie vote and the original resolution was then adopted by the following vote: Ayes—Regents Booth, Mills, Winans, Stebbins, Archer, Martin, McKee, Swift, Moss, Ralston and Haight. Noes—Regents Estee, Hallidie, Dwinelle, Sachs, Felton and Hamilton. Excused—Regent Hagar. Absent—Regents Pacheco, Bolander, Carey, Bowie and Gilman.

Regent Hamilton then offered a protest against the removal of Professor Carr, embodying the objection he had urged in his speech, and requested that the same be placed on record. It was as follows:

I protest against the summary removal of Prof. Carr at this time.

First.—Because such removal will be in direct violation of pledges made by friends of the University to the House Committee on Education of the last Legislature.

Second.—I believe such an act is in opposition to the wishes of a large class of the friends of the University, viz., the agriculturists and mechanics of California, and will go far to confirm the belief that the vacating of the Chair of Professor of Agriculture at this time is more to gratify personal feeling than to subserve the public interest.

Third.—Because such removal will have the effect of strengthening opposition to the present management and give color to the charge now so openly preferred. That the President and Regents are striving to build up a purely literary institution at Berkley at the expense of the agricultural and mechanical interests, and are thus diverting the University from the original purpose for which it was formed, by either ignoring entirely or making those objects secondary which the organic act declared should be primary ones.

Fourth.—Because the summary dismissal of any Professor of the University for alleged incompetency, without first granting the accused the privilege of a hearing, and an opportunity to defend himself from the charges made against him, is demoralizing in its tendency, and is not in accordance with the principles of right and equity which should ever prevail in the management of the institution.

J. M. HAMILTON

The Regents refused to receive it. A respectful, yet firm and pointed protest was also presented from a Joint Committee of

nine, representing the State Grange, the Mechanics' State Council and Mechanics' Deliberative Assembly. In the interval between the two meetings many respectable organizations had passed condemnatory resolutions, and the newspapers, religious and secular, had with almost entire unanimity voiced the popular sentiment with regard to the proposed action.

### REGENT STEBBINS.

The falsehood contained in the resolution offered by Rev. Regent Stebbins is only equaled by its malignity. That the Board should retreat behind the insinuation that it were "best for me that there should be no useless publicity," though I had asked for an investigation, was no surprise, for it was the line adopted in Professor Fisher's case. It is the common policy of cowardice to stab in the dark. Timely warning had been been sent me from the East by parties to whom they had applied for information, which they hoped might help to justify their action with the public. They had even requested such information to be telegraphed, so great was their need.

### GOVERNOR BOOTH.

That Governor Booth should turn his back upon the men who elected him, and the principles he had professed to favor, was consistent with his past history.

During the canvas for Governor he spoke warmly for the University to the citizens of Oakland. That object attained, he opposed the necessary appropriations for buildings, but the measure was carried in spite of the "crack of the executive whip," as Senator Tompkins expressed it. (See Senate Proceedings in Sacramento *Union*, April 1st, 1872.)

He was severe in his criticisms on the administration and extravagance of the Regents. He defeated the election of Regent Tompkins to the Presidency and secured that of his obsequious follower, Gilman, who he will doubtless drop as readily whenever his interest requires it. When Governor Booth was inaugurated, Governor Haight urgently requested the attendance of the University cadets to give eclat to the occasion, and help to secure those very appropriations, but no hint was given as to the way in which the expenses of the trip were to be met. The Faculty voted the students leave of absence on condition that $500 could be raised to defray the expenses of the battalion. No money being obtained, at the last moment I gave President Durant my check for that amount. A few weeks later, on the visit of the Legislative Committee, they and the Regents were sumptuously entertained at Blaise's and Tubbs' Hotel, at the expense

of the University. (See Mr. Moulder's testimony before the Investigating Committee, 1873-4.) That

GOVERNOR HAIGHT.

Was forced to resort to the desperate threat made to Regent Swift, that unless he (Swift) would vote against me, he (Haight) would resign, did not susprise me, for Governor Haight, through his appointments, is responsble for the present condition of things. The powers of the Regents have been more and more centralized from the beginning, every vacancy, with a single exception, being filled with the personal friends or business associates of the Regents. Those cunning provisions of the Organic Act, which enabled him to dispense with confirmations, and by which "no member of the Board of Regents of the University shall be deemed a public officer by virtue of such membership, or required to take any oath of office; but his employment as such shall be held and deemed exclusively a private trust," (See Organic Act, Section 11,) could hardly have escaped his observation.

The recent presentation by Governor Haight of "Our University" at the Yale College Commencement shows plainly enough that the aim of the Regents has not been to execute the noble purposes of Congress and the State, but still further to enlarge and concentrate their own powers. The skillful manipulation of and changes in the Organic Act and laws relating to the University, such as making the President a voting member of the Board, conferring upon it the power of removing Professors at pleasure, which changes were effected by Governor Booth's Code examiner, Regent Dwinelle, are sufficient illustrations.

The managing Regents, known as the Advisory Committee, are not for the first time on the defensive. They were deeply and equally implicated, and President Gilman with them, in whatever "informalities" or irregularities attended the construction of the College of Letters. They are equally responsible for the sale of the agricultural farm and other landed property at Berkeley, and for the use of the funds in speculative enterprises.

REGENTS ON THE DEFENSIVE.

That Mr. Dwinelle felt himself committed to an offensive neutrality did not surprise me, nor will it the Legislative Committees, who were acquainted with the damaging reasons which made such pledges necessary in his case.

That honorable men in the Board, personally unacquainted with me, should lend themselves to an act of almost unparalleled injustice in the history of public institutions, is to be accounted

for only on the theory that they are ignorant of the facts and acting upon false information. Of those members who urged an investigation into the true reasons for this action, and whose rejected resolution furnishes sufficient evidence of their uprightness, it can only be said that they did what they could. The only member of that Board who ever held a College office, and whose honored name is known through the world of letters, has most earnestly resisted these arbitrary measures. They had, unfortunately, placed too much power in the hands of the President, a person without experience in Government, without knowledge, interest or sympathy in industrial education, and who had obtained a recognized position among the obstructionists. They would be the first to see the absurdity of asking a Board of Farmers and Mechanics to control the affairs of a law school. Yet they have opposed the admission into their body of any representatives from the classes the foundation was primarily intended to benefit. There are plenty of men in those classes who are the peers of the Regents in intellectual ability. The Board of Regents, as at present constituted, is an anomaly in the history of democratic institutions. It is virtually a self-perpetuating close corporation, managing a property already worth more than a million dollars, commanding an important and constantly increasing political influence. Already the skillful dispensing of patronage has made itself felt at Berkeley. What it may become in the future requires no illustration.

### THE FACULTY IN THE DARK.

In no institution with which I have been connected or have any knowledge, is the position of the Faculty so depreciated, ignoble and insecure. No talents, however eminent, no zeal or ability however tried, can count as an element of success where there is a secret policy to be maintained which the teacher is ignorant of. Every Professor wishes to keep his department abreast of the time, and should feel at liberty in the employment of means and methods of which he is the best judge. The Faculty of our University have been working in the dark, especially those engaged in scientific instruction. When Professor Rising was appointed to the Professorship of Mining and Metallurgy it was reasonable to suppose it meant instruction in those branches—the possible practical opening of the College of Mines. But when he arrived, Regent Stebbins had written to him that he was not expected to give instruction in mining or metallurgy, and, as my appointment as Professor of Chemistry had never been revoked, we were in doubt what position it was expected he would fill. We could only understand this: That there was

one policy presented to the public and another quite different policy, never plainly expressed, which was directing the educational features of the institution.

The former President had no seat in the Board, and no responsibility in determining its action.

It is no singular that the Regents should wish to exchange my services for those of a stranger to the events herein narrated. I came to California to study its industries with a view to employing the information thus gained in another field.

My letters of introduction presented to Governor Haight, Mr. Stebbins and other prominent citizens secured every needed facility, and were from sources which warranted their confidence and justified my election to the Professorship from which they have removed me. My record up to that time was well known to them. I had been constantly employed in prominent institutions for nearly thirty years. A Professorship was open to my acceptance in an Eastern College when I was appointed here.

### POSITION DEFINED.

In the University of California I have had the misfortune to be the only representative of the agricultural interests, though not their only friend. I saw the land sold which was so necessary to our practical education; then announcements so changed that the Agricultural College, as such, no longer existed. Then the accommodations designed for its use were taken for other purposes. Then a Loan Fund substituted for the self-respecting manual labor system required by law, and, finally, an attempt to vacate the Chair of Agriculture. I was powerless to prevent these evils. That I loyally and honorably desired it, and presented my views first of all to the Regents, is proven in the foregoing pages. The necessity for a "change in the Professorship," so strongly put by Regent Stebbins in his studiedly-insulting resolution, was not so much to give "greater efficiency to the department" as to secure its permanent inefficiency and the private ends of President Gilman and the Advisory Committee. It is not unlikely, under the tremendous pressure of public opinion, that a spasmodic attempt will now be made to show zeal and efficiency in promoting the practical features so presistently neglected,. Those who were present on Commencement day will remember that when the President and Regent Stebbins announced the programme for the coming year, there was nothing promised in these directions.

### COLLEGE OF MECHANIC ARTS.

You have asked for information, also, concerning the College

of Mechanic Arts. As, to the inquiries of Congress concerning the agricultural department, the answer must be made, that six years after our organization we had neither experimental farm, or stock or team, or farming machinery or implements; that we had not planted a fruit tree, so of the department of mechanic arts it must be said, we have no shops, no practical instruction or special teacher. Much valuable theoretical instruction is given by Prof. Le Conte to the students of all the so-called Colleges, in common. The logic which has been employed by Gilman and the Regents would make not only every high school and academy in the State an agricultural and mechanical college, but those of law, medicine and divinity, for they all "touch upon" subjects related to these pursuits. But no amount of logic will convince the farmers and mechanics of the State that a horse chestnut and a chestnut horse are of the same practical value, or that the Colleges of Agriculture and Mechanic Arts, without farm or shops to-day, were the "first equipped with the necesary apparatus."

CORNELL UNIVERSITY.

A good deal of the work upon the Cornell University buildings was done by the mechanical students. President White says of this department in Cornell's University: "Professorships of Industrial Mechanics and Practical Mechanics were early established and filled. Valuable models were imported; a large amount of machinery was acquired. Hon. Hiram Sibley erected a building expressly for this purpose, gave $10,000 to furnish it, and afterwards a donation of $30,000 for its equipment. There are now closely connected with the lecture room, in which the theoretical side of mechanic arts is presented, other rooms for the designing and modeling of machinery, and work-shops fitted with power and machinery for working in wood and metals, in which the practical side will be conducted. The machine shop is to be conducted wholly as a means of instruction, and each student will be required to devote at least two hours of the day to work in the shop, so that he will not only get theory and practice combined, but he will also have opportunies to construct and use tools of the greatest precision. Each candidate for the degree of Bachelor of Mechanical Engineering will be given an opportunity to design and construct some machine or piece of apparatus, or conduct a series of experiments, approved by the department, such as promise to be of public utility. A special course will be arranged with such young men as have a fair knowledge of the machinist's or pattern-maker's trade, who desire to fit themselves for foremen or leading positions in their

business. Practice will be given in work of the highest class, with thorough instructions in draughting and mathematics. From such students, forty-five hours per week, aside from recitations, will be required, either in the machine shop or draughting room," etc. (See Cornell University register, pp. 73–74.)

The history of our Mechanic Arts College is confined to the courses of general lectures in San Francisco, given each Winter by the Professors of the University, as a part of their intruction. These certainly have had no special relation to the mechanic arts. Usefnl as they have been in information imparted and by inspiring a kindly feeling towards the University, they in no respect lessen the necessity of carrying out in good faith the provisions of the law. The scientific lectures given in Boston year after year by no means supplied the want of a Technological School, which divided these with the Massachuesetts Agricultural College, the proceeds of the Congressional grant. When the President of that school, Mr. Runkle, came to this coast, three years ago, and purchased a five stamp-mill from H. J. Booth & Co., of San Francisco, and shipped Colorado ores by the ton for his Boston students to experiment with, the firm generously presented a similar mill, through me, to the University of California. It has never been set up, nor do I know what has become of it.

### WHAT HAS BECOME OF THE $30,000?

At the opening of the Mechanics' Institute lectures in San Francisco last year, President Gilman announced that the sum of fifteen thousand dollars a year for two years had been guaranteed by some of the wealthy gentlemen of San Francisco to carry on certain branches of technological instruction. Just what relation this had to the University I do not know; there has been no public announcement that such instruction is yet furnished, or that it is to be furnished the coming Winter. I believed at the time it was an adroit move to checkmate the establishment of a Mechanic Arts College at Berkeley.

### THE OBJECT OF AGRICULTURAL COLLEGES.

The fact should never be lost sight of that the object of Agricultural Colleges is to fit men for the business of agriculture, to train men in the rural and domestic sciences, arts and economies —in other words, to put brains into these pursuits, and elevate them to the dignity of other callings. We have had as many translations of the words of the Congressional Act "in order to promote the liberal and practical education of the industrial classes in the pursuits of agricultural and the mechanic arts," as if they were written in the arrow-headed characters of ancient

Ninevah. Congress meant to endow schools that would bear the same relation to those pursuits that Schools of Law and Medicine do to those professions. As far as this is done the results are all that could reasonably be expected. Where they are managed in the interests of other pursuits, as in our own case, they are not eminent successes. The question as to who is to blame can easily be settled by enquiring who has the responsibility; for in a matter like this, ignorance is not a valid plea. Farmers and mechanics must take the management of institutions designed for their benefit, into their own hands if they would have them succeed. No other classes are or can be so deeply interested in their success.

The average time since the opening of the thirty-nine Agricultural Colleges, enjoying the national benefaction, is less than five years. Twenty-four of them had, a year ago, an attendance of 2,604 students, with 321 instructors—an average of 109 and 12.3, respectively; while the 217 old institutions (from 30 to 100 years old) which reported their collegiate and past graduate students, in 1872 had 20,866 and 3,018 instructors—an average of 95 and 13.8, respectively. They have called out State and individual donations to a very large amount. Thirteen of them have thus received $2,923,550. Eighteen, not including the richest, Cornell, possess property and funds to the amount of $8,272,382. Neither is it true that nineteen-twentieths of their graduates never take to agriculture for a living.

Massachusetts is not an agricultural State, but she says of the fifty-seven graduates of her Agricultural College, "A large portion of them have engaged in agricultural and horticultural pursuits." Michigan says of her sixty-seven graduates, "A large portion of them have devoted themselves to agricultural pursuits." If Cornell University has but *four* Agricultural students, we are sorry for the State of New York, which ought to have 4,000. Maine, Massachusetts, Michigan, Iowa, are making educated farmers by the hundred in Agricultural Colleges, separated from the overpowering influence of literary and purely scientific education. The difference is in the omission of the practical, for the quality and quantity of *theoretical* instruction is nearly the same in both cases: And more than all, the difference is in the *spirit of the administrative* or directing power of the Institutions.

## CONCLUSION.

The President of the Board of Regents, Gov. Booth, has said, "In the broad daylight of free inquiry and full information, the people are responsible for every public abuse." If

my removal has stimulated enquiry, and furnished needed information, if what I have said will lead the people to guard with more zealous care the precious inheritance intrusted to them, a great benefit will have been secured at a trifling cost.

The opportunities the Regents claim to have had to judge of my fitness and competency have never been improved, for not one who voted for my removal is an agriculturist, and not one, including Regent Gilman, was ever present at one of my lectures to the agricultural class. The same lectures, general and special, before farmers' clubs and associations have been cordially approved, and their publication requested. My life-long interest and association with the working men of the country has given me a vital interest in all their organizations. In this lies the secret of my offence to the Univerisity and its present rulers.

That our colleges have fostered a spirit of caste which has made them uncomfortable, to say the least, for students of industry, will not be denied by those who witnessed the early efforts to graft the new education upon the old.

They have been aristocratic rather than democratic in their tendencies. We have no other aristocracy than that of wealth, and within a few years we have seen how dangerous and how corrupting the power of concentrated wealth may become. The people must erect their own safeguards. Let our public institutions remain and become more and more popular in the highest sense if the word—exponents of the traditions, spirit and determination of the people of California, rather than a handful of politicians and capitalists. Instead of separating our Agricultural and Mechanical schools from those of Letters and the Professions, let us have the latter developed around, not above, the Industrial in the order of their necessity to the public welfare. Let their interests be confided to representative, unselfish men, who have faith in the intrinsic dignity of all labor and in the elevation of the people. Respectfully submitted,

EZRA S. CARR.

Oakland, September 5, 1874.

# APPENDIX.

I have frequently alluded in the foregoing pages to the "Statement" of the Regents to a Joint Committee of the Legislature of 1873-74, appointed at their request, which they say was "Carefully considered by them, unanimously adopted and certified to as correct in all its particulars." This document is dated March 4, 1874. It not only contradicts itself in important particulars, but is at variance with other well attested facts, documents and records.

The Regents tell us (page 37 of Statement) that they have either sold or contracted to sell the entire grant of 150,000 acres at $5.00 per acre, in gold coin, net, 20 per cent. being paid down, *the remaining* 80 *per cent. bearing interest at* 10 *per cent. per annum.* This should give us a productive fund of $750,000, or an income of $75,000 per annum. The law of Congress requires this to be invested in United States Stocks or other safe stocks. It is not so invested.

The total amount of principal, cash, received at date of Statements, was $114,025.47, of this amount, $79,709.96 was in the hands of Regent Ralston, bearing interest at the rate of six per cent. per annum. $34,315.51 was expended for the purchase of the Brayton Estate, for which Regent Tompkins was agent; (see pages 33 and 34.) Applications on file and certificates of deposit to the amount of $94,573, "bearing interest at 10 per cent." are in the hands of the Land Agent, the money in the Bank of California, but no account of interest allowed by said Bank appears in the exhibit of the Regents, (see page 35.) Four dollars credit per acre on 94,573 acres amounts to $378,292 and should have been drawing interest, otherwise the income from the land fund is diminished at the rate of $37,829 per annum.

A still more serious evil appears in the fact that the Regents have so framed their regulations, that the purchaser is not obliged to pay interest on the credit portion of his purchase money until his title is obtained. The time intervening between the application and rendering of patent may be extended for years, while the land is occupied and cleared of timber. No bonds had been given guarding against such a contingency up to the 1st of July last; while on page 36 of the Statements we

find that 8,840 acres have been forfeited by applicants and returned to the Land Agent. We have seen from the Statements that $79,709.96 of the Agricultural Land Fund was drawing interest at six per cent. per annum ; $34,315.51, temporarily invested in property, subject to a mortgage of $50,000, bearing originally ten and later nine per cent. per annum interest, and $94,583 drawing no interest at all up to the 1st of July last, as appears from the books. "I submit this as conclusive evidence of the care, the ability, and the fidelity" with which the Regents say, "they have administered the responsible and onerous trust confided to them."

Again, with reference to the Brayton property, or rather "four full blocks in the heart of the growing city of Oakland," we are told, "it has cost to date, including $11,386.25, paid as interest on the mortgage, the sum of $112,476.25 ;" (page 34 of Statements.) On page 44 of the Financial Exhibit, the property is stated to have cost $113,592.45, (Brayton Estate,) and the "College of California property *including the block and buildings thereon*" $49,030.04, or $162,000 for the four full blocks.

Blocks No. 2 and 3, purchased of the Brayton Estate, cost $94,315.51, according to the Statements on page 40, in this manner : They assumed a 50,000 mortgage for Mrs. Brayton, "and transferred to the vendors the outside property, valued at about $30,000, adjoining the University site at Berkeley, which had been obtained without any additional cash expenditure." But, on the $50,000 mortgage $11,386.25 interest was paid, also $2,-929.51 for some unexplained purpose, as will be seen by referring to page 34, where we find that $34,315.51 of the principal of the land fund was "temporarily invested" in this purchase, $20,-000 of this specific sum having been paid subsequently for another block of Brayton property "to complete the quadrangle." We find that the addition of $11,386.25 to that sum leaves $2,-929.51 unaccounted for, making the entire cost of the two blocks upon which the mortgage rested, as above stated.

If the block and buildings formerly belonging to the College of California, are considered as a part of the "purchase" which has proved valuable to the State, "being worth many thousand dollars more than it has cost," the total cost of the four full blocks may be summed up as follows, according to the Regents' own showing:

| | |
|---|---|
| The College Block, or No. 1, cost | $49,030.04 |
| Blocks 2 and 3, (Brayton property,) cost, by mortgage assumed | $50,000.00 |
| Interest on the same | 11,386.25 |
| Item unaccounted for | 2,929.26 |
| | $94,315.52 |
| Vacant Block, No. 4, cost | $20,000.00 |
| Total cost of four full blocks | $163,345.55 |

Yet on page 34 of the Statements, the Regents say: "Should it be deemed best to dispose of this property it will realize $150,000 at least, sufficient to pay off the mortgage of $50,000, to repay the Land Fund the $34,315.51 borrowed, *and leave a surplus* of $65,684.48, yielding in the shape of profit a far larger interest upon the amount of the land fund invested than could possibly have been derived from any ordinary safe investment." From their own showing these four blocks cost $163,345.55, and they will "realize," (page 34 of Statements,) $150,000, making a net loss of $13,345.55.

It were well for the Agricultural interests of the University if this were all the Regents have attempted to conceal in counting the cost of that dear purchase. On page 46 of the Statements, they count among the possessions of the University, the present domain, "200 acres of land, *worth, at a low valuation*, $1,000 *per acre*." *Directly Adjoining*, and situated on both sides of Strawberry Creek, the beautiful wooded stream which meanders through the University grounds, is the property exchanged with the Brayton Estate, "valued at about $30,000," described in the deeds as follows: "Lots 1 to 11 inclusive, in Block B; lot 49 in Block F, and lots 20, 21, 23, 24, 26, 27, 28, 29, 31, 32 in Block D; 81, 70-100 *acres* of land in Nos. 80 and 82, Rellenberger's map, (situated between the Deaf and Dumb Asylum and University,) 112 *acres* of undivided or mountain land," covering unestimable water rights and resources. Two hundred thousand dollars is as low a valuation for this land as for that remaining in possession of the University.

The Brayton property, therefore cost the University $170,000 more than is shown in the Statements, it robbed the experimental farm of ground most essential to its uses, well sheltered and valuable for horticultural purposes, with water rights which no money can ever replace.

The account then, stands as follows:

| | |
|---|---|
| Brayton property, (3 blocks) cost in Berkeley lands | $200,000.00 |
| Mortgage on two blocks | 50,000.00 |
| Cash paid from Land Fund | 34,315.51 |
| Cash paid on College Block | 49,345.55 |
| Total cost | $333,345.55 |
| Value as estimated by Regents | $150,000.00 |
| Loss to the University | $183,345.55 |

These lands were *donated* and in some of them the terms of the deeds are explicit, *"for an Agricultural College."* The liabilities of the College of California, paid by the Regents, did not equal the amount realized on the College Block at the recent sale. The Berkeley lands also were advancing in value, and since the removal of the University, are practically unestimable, even considered with reference to future speculative uses.

If this is ths best showing the Regents can make of the management of property lying directly under their eyes, what, in all probability, would be the exhibit of losses in the management of 150,000 acres of valuable timber and other lands of which the public knows little or nothing? The history of the sales of school and University Lands has been one of shameless fraud and peculation committed, not upon one, but many generations.

Misstatements and misrepresentations abound in these and more recent Statements of the Regents upon other points. They authorized me to employ a gardener Sept. 18, 1872, yet, in reply to the inquiries made by the Grangers and Mechanics Aug. 8, 1874, they state that "*within the past year* the Berkeley property has been surveyed and mapped, and the *right places marked out for Agriculture, Horticulture, Botanic*, Garden and Forestry." In their printed statements, dated March 3d, they say that "$500 was placed at my disposal to secure the aid of competent lecturers on special subjects," but on April 17th, the Secretary writes, asking me to name these lecturers and submit plans, "that the Board may understand just what you would like to see done *when the outlays asked for are authorized!*" I might multiply these instances, demonstrating the financial "unfitness" of the managing Regents, to administer a trust of $750,000 from the Nation, and a still larger sum from the State; and their moral "incompetency" to tell the truth, in the exceptional position of witnesses not under oath.

But I think enough has been said to guard the true friends of the University against the sophisms of educational charlatans and political demagogues, and from future betrayals by the land speculators and moneyed corporations who have hitherto managed it in their own rather than the interests of the people.

THE

# University and its Managers

## BEFORE THE PEOPLE AND THE LAW.

BY PROF. WM. SWINTON.

# PROF. SWINTON'S TESTIMONY

## Before the Legislature of California,

—GIVEN TO THE—

## Joint Legislative Committee on University Affairs.

MARCH 11th, 1874.

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WM. SWINTON, *Sworn.*

The Chairman.—Prof. Swinton, we propose to examine you first under the first resolution: (reads,) "What instruction has been given in Agriculture and the Mechanic Arts in the University, whether it has been defective or not; and if defective, what is the cause, remedy, etc?" In what particulars do you disagree with the "Statements" embodied in this report? (Regents' of March 3, 1874.)

A.—I object to the use of the term "College of Agriculture," as it does not conform to our last official statement of the organization of the University. We have no such thing.

Mr. Tinnin.—What did I understand was your objection to the report—your objection to calling it an Agricultural College?

A.—It does not conform to the official statement; I do not think a special course in the College of Science is an Agricultural College.

Mr. Friedenrich.—In what way does it lack or fall short?

A.—A number of subjects stated in our catalogue are not taught.

Q.—Can you suggest any remedy? Any improvement?

A. —As a measure of economy, I should say that the abolition of the office of President would be a desirable measure. I should be happy to respond in writing, more fully.

Q.—Can you name any College that does not have a President?

A.—Yes sir. The University of Virginia.

Q.—What were your relations with the President?

A.—They have always been those of *civility*. I think he is not as good a President as the University of California deserves.

Q.—Can you give us any reasons for that?

A.—I will. I think he has put the Board of Regents in a sort of tacit attitude of antagonism to the wishes of the people of the State in regard to certain phases of practical education.

Q.—In what way?

A.—Rather by inference and implication than by direct statement, viz. giving the impression that the people who are struggling passionately, though somewhat crudely, after a great educational idea are mistaken in their wishes, that their idea has been tested elsewhere and failed; query, has it failed? That is one point. Another point is, that I do not think there is that feeling of confidence, on the part of the students towards him, that is necessary to the successful working of the University for any considerable length of time.

Q.—How long have you entertained these feelings?

A.—It is difficult to state the genesis of feeling. I never had a very high regard for his fitness for the position, founded on what I heard in the East. I did not entertain a very high regard for his abilities before he came here. My observation did not increase my regard for his fitness. That feeling has been growing ever since.

Q.—In what way do you believe that the Board of Regents, either acting under the influence of President Gilman or not, failed to carry out the wishes of the people in the management or establishment of the Agricultural Department of the University.

Mr. Friedenrich.—I would suggest, Mr. Chairman, that the witness present his statement written out.

*To the Chairman of the Joint Committee on the University:*

SIR: When, on the eleventh instant, I had the honor of appearing before your honorable committee, in obedience to a subpœna, a member (Mr. Amerman) made the following statement:

"I suppose, so far as the committee is concerned, that they want to obtain any information that it is possible to obtain in relation to the condition and management of the University, and with which the Faculty are conversant. Without putting any specific questions, I suppose it would be perfectly in order for you to state anything that would throw light upon this subject."

In accordance with this courteous invitation, I beg leave to present the subjoined considerations. At the outset, however, it is proper for me to promise, that it is not my design to enter into the large and complicated question of university organization (for the framework of that is already provided for in the Organic Act,) but merely to offer certain general views regarding the University's "condition and management."

And first, as to the present state of the University with relation both to the purpose contemplated by the national land grant, which constitutes its main permanent endowment, and to the expressed desire of the people, whose benefactions, through legislative action, have been and still are necessary to the existence of the institution.

THE NATIONAL BENEFACTION.

The purpose contemplated by the national land grant is explicitly set forth in the language of the law of Congress, which declares that "the fund shall be applied to the endowment support and maintenance of at least one college, where the *leading object* shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to *agriculture and the mechanic arts.*"

True, the law, by not excluding "other scientific and literary studies," presents an opportunity for the introduction of a general scientific course, but it at the same time concentrates the main force of its purpose on the industrial arts as the "leading object" of the National Colleges.

This law dates back to 1862; and considering the period at which it was framed, it is a notable instance of advanced educational views—for the noble and democratic theory of the people's university, which shall aim at the "betterment of man's estate," is a modern thought, originating not in the cloister but in the popular heart, and even yet unappreciated by the scholastic class, who, by the very fact of their position, are expounders of the old rather than creators of the new.

Unmistakable, however, as is the scope of the law, it, unfortunately, by the generality of its terms, leaves an opening, small indeed, yet sufficiently wide to have prompted in several instances the attempt to pervert the essential aim of the Act by converting the National Colleges into literary and "pure science" schools—that is to say: the non-exclusion of the general culture studies as a *secondary* object has, by the obstructive ingenuity of pedantry, been made the excuse for the exclusion of that which, with noticeable emphasis, is declared to be the *primary* object, to wit: the practical application of science to the wants of man. I say that this looseness in the law has, in several instances, been made the occasion for the kind of perversion spoken of (I waive, for the moment, the query whether such perversion has been attempted in the case of the University of California;) and this abuse of a grand intent has alarmed the friends of popular practical education. Thus the able and exhaustive Report on University Education, published by Congress in 1870, speaks of the "danger to the interests of agriculture and the mechanic arts, when confided to men unacquainted with and wholly unappreciative of them." "The friends of agriculture," it continues, "should make sure in effecting a consolidation with an institution of different character and aims (I waive, for the moment, the query whether the late College of California is a case in point,) that the administration of the dual institution be confided to men of large, comprehensive and impartial views." (Report on Education, by Dr. I. W. Hoyt, U. S. Commissioner, p. 152.)

But there is a yet more decisive and authoritive expression of opinion respecting the vital object of the national grant for industrial schools, in Morrill's new Agricultural Bill, now pending before Congress. For it is declared that this has been

rendered necessary in order to correct just the kind of abuse here spoken of, and to insure good faith. "If," says the Act, "it shall at any time be made to appear to the Secretary of the Interior, by unequivocal evidence, that any State or Territory has not in good faith substantially complied with the provisions of the Act named in the first section of this Act, as to the use, object and purpose therein contemplated, he shall at once duly notify the Treasurer of the United States, who shall thereafter withhold the payment of any interest which may have accrued, or accrue, to any colleges in such State or Territory, until such time as the Secretary of the Interior shall be satisfied as to the compliance with the provisions of said Act, and shall so notify the Treasurer aforesaid." The University of California is deeply interested in the success of this bill, for it would, in case it could be shown that the institution has faithfully complied with the provisions of this Act, in making agriculture and the mechanic arts the leading object, add over $30,000 per annum to its permanent endowment. (But I waive, for the moment, the query whether such compliance could be shown by the Board of Regents of the University of California.)

In regard to the new bill, and the attitude which the scientific doctrinaries hold thereto, the eleventh annual report of the Massachusetts Agricultural College (1874) says: "Many of the leading educators [*i. e.*, individuals in leading educational positions,] who seem to have hitherto regarded these new institutions with silent contempt, have become alarmed at their rising importance; and Presidents of Universities, both old and new, appeared at the Capitol in person, or by letter, to remonstrate against the proposed action of Congress." (Here, too, I waive, for the moment, the consideration whether the President of the University of California was one of these "remonstrants.")

### THE PEOPLE'S WISH.

With this much of consideration of the purpose contemplated by the national land grant for Agricultural and Mechanic Arts Colleges, I have now to make up the correlative question: what is the wish of the people of California touching the University, which they are taxing themselves to sustain?

On this head there is happily no room for doubt. The memorial now before this Legislature—a memorial behind which stands the imposing and voluminous figure of the two great producing classes, to wit: the agriculturists and artisans of this State—voices with no ambiguous utterance, the passionate and irrepressible desire for a University *of* the people, *by* the people, *for* the people. Says the memorial:

"Believing that the first and highest employment of men is to feed, shelter and clothe the world, we ask that the graduates of our industrial colleges may be peers of scholars in mental culture, and peers of laborers in manual skill and physical development. Agriculture, in its various departments, should be so taught and practiced in our University as to send forth scientific farmers, whose labor and skill can utilize the soil and develope its greatest resources, while the mechanical department should graduate learned and skilled mechanics; *and it is the earnest desire of the agriculturists and mechanics of this State to make these great departments of industry the leading feature of our State University.*" (Memorial of California State Grange and Mechanics' Deliberative Assembly on the State University, p. 8.)

These ringing declarations, which, to my mind, add a new dignity to the industrial vocation, methinks they are the voice, as of many waters, of the *People* who come up to to the Capitol to demand that their great intent be not obstructed, but carried out —and I most respectfully leave with your committee to determine whether this majestical array is to be waived away by the shrunken figure of a college President discoursing scholastic platitudes about the supposititious "failure" of the people's glorious aspiration!

APOLOGETIC.

If, in this presentation of the claims which the National Government, as well as the people of California, have on the University, I have, as is probable, obtruded on your committee facts and views already familiar to you, it is because it has seemed to me that they are sometimes left out of sight, and because they are the necessary preliminary to the statement of the actual condition of the University in relation to its fundamental aim and purpose. This is the cardinal point in your inquiry, and I now proceed to answer it, premising, however, that matters as well of *theory* as of *fact*, will have to be taken into account.

As regards the past, I have stated in my testimony that probably the Board of Regents of the University has, in the matter of industrial education, acted as well as could be expected of a body constituted as it is. According to their "lights" the members have doubtless aimed at the best interests of the University. There have been, again, many obstacles to the carrying out of the original intent of the University, such as the recentness of its organization, its late change of location, etc. These should have a *due* weight; and yet, I venture to declare, not an *undue* weight, for many of the State institutions, the recipients of the National Grant for Agricultural and Industrial Colleges, that are no older than the University of California, have already planted things like to last, in the establishment of practical schools, which, by their signal success, have demonstrated that the national grant was founded in the largest wisdom.

This question, however, of what the Regents have done or

have left undone is a question apart, the answer to which may be left to their own consciences. Meanwhile, the main, vital, overshadowing question is, what is *now* the

THEORY OF THE MANAGERS OF THE UNIVERSITY

Regarding practical education, so far as that theory, design, purpose and intent, may be gathered from the published utterances thereanent?

On this subject the most salient and memorable exposition was made by President Gilman in his address before the Legislature. He said, after stating the scope of the University, that, "if inquiry should show that the friends of agricultural education, under the most favorable circumstances, were disappointed, or that their hopes had been abandoned, California should avail herself of this experience, and before incurring radical change or expense, ascertain the lessons of experience elsewhere."

It will be noticed here that the failure of industrial institutions is made, not declaratively, but by hypothesis. Yet, that President Gilman wished to leave the *impression* that Agricultural and Mechanic Arts Colleges are failures, is sufficiently evidenced by the fact that he proceeds to array all the supposed "disappointments" and "abandonments of hope" by "the friends (?) of agricultural education," citing the Agricultural Colleges of Massachusetts, New York, Iowa, etc., as instances. And, to reinforce this impression, a compilation of all the dismal jeremiades over the supposed "failure" of these schools has recently been made by the same hand, printed and laid on the members' desks. (Facts in relation to Agricultural Colleges.) I cannot refrain from saying that it is difficult to conceive any adequate motive for this wholesale perversion of the truth. The progress, success, and benefits of the Industrial Universities and Colleges founded by Congress to promote agriculture and the mechanic arts, considering the means employed, the recentness of their establishment, and the obstructions put in their way by the caste prejudice of the classicists and scientific schoolmen, have been far beyond that of any other higher institutions of learning in the country, and form, indeed the most inspiring educational fact of the nineteenth century. I need only refer you to the last Report of the National Department of Agriculture for information touching the progress of the colleges enjoying the Congressional grant have. This document presents a most gratifying exhibit of the thirty-two State Agricultural and Industrial Colleges, which are attended by more than three thousand students, a large portion of whom are pursuing agricultural and mechanical studies, and are under the care and instruction

of more than three hundred and fifty Professors. On this head I respectfully refer to an admirable *resumé* of the success of these institutions, contained in the recently published report of the Committee on Education in the California Legislature. (See pp. 4 and 5.)

### WHY SHOULD PRACTICAL EDUCATION BE A FAILURE?

But, aside from the demonstrated *fact* of the success of these establishments, I cannot refrain from asking that *a priori* reason exists for supposing that they should be a failure, if under the conduct of men hospitable to the great cause? In various departments of human activity it is recognized that pure science must be brought down into contact with professional pursuits, and it is conceded that only special schools can perform this work. That there is a point of contact between pure mathematics and the art of navigation, is made manifest by the fact that the Federal Government sustains a Naval Academy for the training of skilled officers in a special branch of the public service, and a Military Academy to fit men for another service, to wit, the profession of arms. Medicine, I believe, is not taught in the abstract, but in theaters of anatomy and in the clinics of the hospital; and law schools seem to be successful just in proportion as they bring the exposition of pure principles in relation with the methods of actual procedure.

Now is it to be supposed that in the exploitation of the productive forces of nature there is no room for the practical applications of science, taught in schools in which theory is brought in contact with practice and experiment? Is the boasted Baconian method, which makes "fruits" (that is, practical results,) the test of sound philosophy, a mere delusion? It is a fact which legislators would do well to take into account, that as in the case of about one half the whole number of the globe's inhabitants the chief occupation is the tilling of the soil, and further, that as in all civilized countries another large part of the population is, in the diversified forms of mechanical industry, engaged in the fabrication of articles useful to man, agriculture and the mechanic arts necessarily form the real basis of a nation's wealth, prosperity and happiness. If, between science and these divine creative functions of humanity there is no connecting link, and lawyers, doctors and priests alone are privileged to draw from the upper reservoirs, then, indeed, may thoughtful men well begin to inquire if science is not out of joint.

### WHAT IS THE FACT?

But on this score speculation is superseded by fact. The Na-

tional Government, acting on the faith of a great and beneficent idea, sought in the Agricultural College bill to elevate the industrial pursuits to the rank and dignity of the so-called learned professions. The conviction had long prevailed that our higher institutions of learning did not confer upon these pursuits equal advantages with the old "professions," and the idea of training young men in the direction of these pursuits, of putting brains into these industries, gained ground and was embodied in the Act of 1862. And every body, but President Gilman, believes that the experiment, wherever fairly and honestly tried, has been a most gratifying success.

MISPLACED IRONY.

In this view, I cannot but think it lamentable that cultured gentlemen of the Board of Regents should have come before your honorable committee (as the testimony shows they have done) to cast ridicule on the popular desire that the applications of science to the great practical interests of life shall receive in the University that consideration which the law demands. The reasonable wish of the people, that some definite efforts shall be made in the direction of agriculture and the mechanic arts is met by the flippant query: "Do you wish us to teach your sons to plow and harrow, to peg shoes, or set up steam engines?" Surely, in view of the weigty interest at stake, there was never made a more melancholy use of the *redutio ad absurdum*. And it is the more melancholy, from ths fact that the triumphant iteration of this argument shows, that in place of being a mere piece of bandinage, it is a significant revelation of the actual attitude of these gentlemen towards the weighty modern problem of the renovation of education into conformity with the broad facts of American politics and sociology. What a proof of the survival of that scholastic feudalism which regarded the learned professions as something in which inhere dignities and proscriptive rights, that the tiller of the soil and the "base mechanical" should be frowned on for claiming!

REVELATIONS.

These revelations of the attitude of President Gilman towards the claims of industrial education, cast a vivid retrospective light on a series of changes which, soon after this accession, were made in the organization of the University—changes made, too, without the advice or consent of the Faculty, and which, I feel free to say, a majority of the members regard as most impolitic, if not illegal. The nature of these changes I now proceed to indicate.

It is well known that the Organic Act provided, in the organization of the University, for the establishment of certain colleges, to wit: a State College of Agriculture, a State College of Mechanic Arts, a State College of Mines, a State College of Civil Engineering, a State College of Letters, etc. The same Act required that the College of Agriculture should be first established, the College of Letters being already in existence, as an heirloom of the old College of California.

Upon this basis the University was organized, and went into operation September, 1869. The first Register (1870) explicitly enumerates these Colleges as the constituent members of the University, and states that "each College confers a proper degree at the end of the course." It is true that this organization was in part an ideal one, seeing that *de facto* neither the College of Mechanic Arts, nor that of Mines, nor that of Civil Engineering, was in existence; but the plan was at least in accordance with law—a curriculum was drawn out for each College, and only the filling of certain chairs was requisite in order that they might pass from the realm of the ideal into that of the real.

The Register of 1872–3—the first after the accession of President Gilman—was to the Faculty the first revelation of a complete transformation in the organization of the University. While the College of Letters remained, the four other Colleges had, to all appearance, become disincorporate, one common curriculum of science being substituted therefor, and only certain special "scientific studies" remaining as ghostly reminences of the College of Agriculture, College of Mechanic Arts, College, of Mining, etc. The last official exhibit of the organization of the University in the proof-sheets of the forthcoming Register for 1874, shows the University to consist of (1) a "Faculty of Science," (2) a "Faculty of Letters"—Agriculture, the Mechanics Arts, Mining, etc., still flitting vaguely as "special courses" in the "Department of Science."

It is true that the change thus affected is one rather of nomclature than of fact, and it would be of no special import were there collateral assurance that the intent of the managers of the University looked to a faithful carrying out of the law; but, taken in connection with the recent persistent championing of the theory that the University should be a literary and "pure science" school of the Connecticut type, and with the statements that the experiment of practical education is a dismal failure, the change of name gathers a most pregnant significance.

One of the most unfortunate results entailed by this merging

of the individuality of the "Colleges" composing the University, is that it takes away the reasonable ground of demand for professors and lecturers to carry on the full *carricula* of said colleges. So long as the *cadre*, or framework of these several Colleges remained, the Regents could point to vacant chairs, and with justice ask the people for means to fill these chairs; but as it now is, one professor would seem to be fully adequate to the instructional demands of any mere "special course" in the Department of Science.

It may now be in place to state briefly

WHAT IS ACTUALLY DOING IN AGRICULTURE

In the University. And on this head, it is proper to mention that the latest Register is scarcely a trustworthy guide, for the imposing display therein made is rather an ideal to be worked up to, than an accomplished or even a possible fact. The work actually done in the "specialty" of agriculture consists exclusively of didactic exposition in the class-room, to wit: five lectures per week on the subjects of agricultural chemistry, agricultural botany, etc.; and as these subjects are in the hands of an able and experienced professor, the instruction cannot be other than valuable; but as an "Agricultural College," this can hardly be deemed a shining success.

In contrast with this meager performance, and as an exemplar of what should be done in California, the mode in which other institutions, founded on the national grant for the establishment of agricultural and industrial colleges, have carried out the "leading object" of the Act, is most instructive. In the recent official printed "Statements" of the Regents to your committee, they say that they "beg those who are interested in the problem (of agricultural and industrial education) to examine the catalogues, registers and reports of other State Colleges, and not rest their opinions upon vague end inaccurate rumors, or hostile criticisms." This suggestion is most appropriate; for such examination, while bringing some mortification by the contrast of the little we have done with the marvelous practical success of these institutions, will afford both a spur to our efforts and a standard for our aims.

ELSEWHERE.

For this purpose an examination of the registers of the Agricultural College of Massachusetts (at Amherst,) and of New York (Cornell,) will suffice.

In the Massachusetts Agricultural College the following Faculty appears in the specialties of agriculture:

Professor CLARK, Professor of Agricultural Botany and Horticulture.

Professor STOCKBRIDGE, Professor of Agriculture.

Professor GOESSMANN, Professor of Agricultural Chemistry.

Professor CRESSY, Professor of Veterinary Science.

Professor PACKARD, Lecturer on Useful and Injurious Insects.

Professor DICKENSON, Lecturer on Rural Law.

S. T. MAYNARD, Gardener and Assistant Professor of Horticulture.

J. C. DILLON, Farm Superintendent.

Says the last register of this institution: "Every science is taught with reference to its application to agriculture and the wants of the farmer. The instruction in agriculture and horticulture includes every branch of farming and gardening which is practiced in Massachusetts, and is both theoretical and practical. Each topic is discussed thoroughly in the lecture room, and again in the plant house or field, where every student is obliged to labor six hours per week." The number of students last year was one hundred and thirty-nine. In regard to the success of the institution the report continues: "The institution has been blessed with its usual prosperity, and has accomplished much good. The farm and stock have steadily improved, and some agricultural experiments have been carried on with interesting and important results. There are hundreds of influential men who, like the lamented Agassiz, were for years after its incorporation entirely skeptical in regard to the possible utility of such an institution, but who are now ready to unite in his magnanimous confession, that he had been mistaken and was glad to be convinced of the fact, and that the college was a complete success, and worthy a place among the scientific institutions of the world."

Cornell University, which was established with the same general aims as the University of California, affords a still more interesting instance of the position which agriculture holds in one institution which shared the national land grant for agricultural colleges. Cornell University consists of a congeries of colleges, just as did our own University until the recent remodeling. One of these colleges is a College of Agriculture. It has a Faculty consisting of *eight professors and ten lecturers*, and these professors and lecturers are engaged purely in special instruction in agriculture. The President of Cornell might have put down the thirty or forty other professors who are engaged in the various dapartments of university work, as swelling this list; but to him evidently had not occurred that ingenious

theory, the invention of the President of the California University, which makes the teachers of all branches of learning Professors of Agriculture—a theory, by virtue of which the Regents, in their recent "Statements," are able to claim that seventeen out of eighteen professors and instructors "now teaching at the University," are teachers of agriculture!

As your committee have asked for special information on this subject, I beg leave to state, that the lectures and exercises in the agricultural college of Cornell University, comprise the following subjects;

1. The *Chemistry* of Agriculture, including the constituents and analytical composition of soils and of cultivated plants, the constituents and chemical agencies of the atmosphere and of water, and the composition of manures.
2. The *Geology* of Agriculture, including the formation or soils, their chemical, physical, and economic character, their suitability for different kinds of crops, and the principal geological features of various portions of the United States as affecting the soil and productions.
3. The *Physics* of Agriculture, including meteorology, or the laws of climate, and light and heat as influencing plant life.
4. The *Mechanics* of Agriculture, and their application to the various descriptions of implements and labor required on the farm.
5. The *Botany* of Agriculture, including structural botany, vegetable physiology, vegetable pathology, and a knowledge of crops cultivated for food and for technical purposes.
6. The *Zoology* of Agriculture, including the habits, diseases, and treatment of live stock, the anatomy of the horse, the cow, the sheep, and other farm animals, and all branches of veterinary surgery and medicine, as well as a special consideration of insects injurious to vegetation.
7. The *Economics* of Agriculture, including the sequence of agricultural operations, the economical divisions of labor, the rotation of crops, the imrpovement of the soil by manuring, draining, and liming, farm engineering and construction, general agricnltural policy, and the management of landed property.

A CONTRAST.

I venture to believe that your committee is now in position to realize not only how far the University of California is behind the other "National Colleges" in respect of this great phase of practical education, but also to how considerable a degree the institution has, during the incumbency of President Gilman, lapsed from the promise of two years ago.

Two years ago the University had an Agricultural College, so named and announced in the official programmes of the institutions; *now* there is no Agricultural College, not even the *theory* of one: but in its room "a special course," not essential to any degree conferred by the University.

*Then* the agricultural graduate received for his four years study a diploma, equivalent in value to that of the College of Letters, and bearing the signatures of all the Professors, whose instruction he had enjoyed; *now* the agricultural graduate receives an inferior style of diploma, signed by to or three Pro-

fessors while, with puzzling inconsistency, it is claimed that nineteen twentieths of the University instruction is enjoyed by the students of agriculture!

*Then* students were directed towards the Agricultural College as intended to give special training in agriculture, as the law provides; *now* the whole scheme of industrial education, as fostered by the National Government in past and prospective action, and as understood and successfully carried out in the several States almost without exception, is held up to the people of California, and to the youth who should be directed and encouraged into industrial callings, as an ignominious failure or a Utopian dream.

*Then* one of the buildings was designed, named ,and dedicated the Agricultural College; *now* the same building is in the University register designated the "South College," or the "College of Science."

*Then* a noble suite of rooms on the main floor of the Agricultural College building was, by mutual agreement among the members of the Faculty, and without objection from the Regents, assigned to the Professor of Agriculture for the special uses of his department; *now*, by an act of the President, or the Advisory Committee, or both, this deparment is grounded in the north end of the basement of said building, where want of sunshine prevents the exhibition of important operations, and where collections are exposed to mold and dampness. (President Gilman has stated that this was done by action of the Faculty. I have never seen a single member of that body who ever heard of the proposition.)

*Then* the University was in a position to avail itself of the further endowment of Congress, as provided in Morrill's supplementary bill, which would add at least thirty thousand dollars per annum to its income; *now* it is not legitimately within the provisions of the new endowment (since the institution has no longer an Agricultural College, but only a "special course"); and if the present head of the University should bear to the Secretary of the Interior his ample accumulation of the "failures" of the National Schools, and also his metamorphosis of the State Agricultural College into a "special course" in a "subdivision" of the "Department of Science," as evidence of honest compliance with the law of 1862, it might be a matter of pleasant speculation whether the Secretary of the Interior would be able to say, "Well done, good and faithful servant."

*Then* the number of agricultural students was increasing; *now* it is diminishing. And, indeed, this is to be expected, for

why should students seek instruction where there is neither land in cultivation, nor stock, nor any other material for illustrating practical agriculture: where they graduate from a "course" instead of a college, and receive a diploma which excites their anger and contempt, and which lacks the signatures of revered and beloved teachers, while the prestige of honors and dignities is reserved for the aspirants for "intellectual" callings.

The length into which I have been necessarily drawn by the exposition of the shortcomings in the Agricultural College, precludes any cosiderable discussion as to the College of Mines, the College of Mechanic Arts, etc. And, indeed, I am saved the need of any discussion of the subject by the fact that these colleges do not even exist.

### THE REGENTS.

I shall now (at your invitation), present a few considerations regarding the Board of Regent, and its relations to the people and the Faculty. These relations, in my view, are neither sound nor healthful. A Board of Regents of twenty-two members, which is in a large degree self-perpetuating, and which is required to render an account of its stewardship but once in two years, local in its character, interests, and associations, and made up almost exclusively of lawyers and other professional men, is, almost of necessity, disqualified from an unprejudiced handling of the question of popular education in its broadest aspects. Such a guild becomes, in spite of itself, a solidarity of resistance to the popular demand, which, however crude, always tends towards reason and justice. I believe this Board has done as well as would any other Board so chosen and constituted. Many of its members I personally respect and honor, while I honestly differ from the educational views to which, as a body, they are no doubt honestly committed. And, indeed, does not the history of nearly every college in the country show that these governing Boards, growing more and more arbitrary and conservative, have to be swept away, and replaced by others more in harmony with modern progress?

What is the remedy? One remedy that is proposed is the reorganization of the Board of Regents, so as, while leaving the present six *ex officio* members, to substitute for the other sixteen Regents, eight members, two from each Congressional District, the term of office being four years. This plan, which would secure representation for the different sections and interests of the State, finds favor with the Legislative Committee on Education, who, in their recent able report, thus express themselves:

"We are of the decided opinion that no State educational institution, such as the Univetsity of California is designed to be, can be as prosperous and useful under the control of local men and interests, as when under the combined control of men representing the varied callings, interests and sections of the entire State. The proposition, it seems to us, answers itself, and does not admit of discussion. We believe that such a change would greatly advance the best interests of the University."

Whether the eight members should be elected by the people or hold under executive appointment, is a matter of detail; in which ever way created, such a Board could not but be in sympathetic relations with the people of the State. I add, that this method prevails in many of the Western States.

THEIR RELATIONS WITH THE FACULTY.

As regards the relations between the Regents and the Faculty, I am aware that I am treading on delicate ground; but I have seen faithful and honorable men, and that within a few days, placed in a position far more delicate, where a full and free utterance of their own convictions was morally impossible, without personal risks that men with families dependent upon them do not care to run, and where the general interests of the institution which they have learned to love with an almost parental sentiment, seemed to require their silence. Nevertheless, I think that truth and honor demand an outspoken expression of opinion on my part, for I am not prepared to except that new definition of treason which makes it consist in doubting for a moment the infallibility of the Board of Regents as to the whole theory and practice of University education.

I feel bold to say that the University of California cannot rest on a sound foundation until there is a rational readjustment of power between the Regents and the Faculty. The relations of the Faculty to the Regents have become more and more that of "employes" to an employer, while the relations of the Regents to the people seem to be less and less those of employed and employer. And between Faculty and Board there is nothing like correlation of rights. The greatest discovery of modern political science is the introduction of checks and balances, as guards against the absolutism of power lodged in the hands of any single body. But, with no power in the hands of the Faculty, and all power in the hands of the Regents, there has ensued the necessary consequence—timidity on the one hand, and despotism on the other. In this state of affairs, a President, however willing to voice the Faculty, would, from the very constiution of human nature, be sure in the long run to go where power lay. I believe President Gilman has been acute enough to see this, and to act accordingly. Now, if in this state of affairs we suppose a President to have some special educational

"crank," bias, or prejudice (say opposition to industrial education), he might, being wholly independent of the Faculty, by assiduous court paid to the Regents, succeed in bringing them over to *his* "policy," and thus in placing the University in an utterly false position.

LOGIC RUN MAD.

It is, in my opinion, precisely through this train of circumstances that the Roard of Regents have, by President Gilman, been placed in the present lamentable position of antagonisn to the popular educational demands. It is only unfortunate that honorable and high-minded men should consider it a matter of pride to maintain this attitude, and, at the slightest suggestion of criticism, form a circumvallation of defence around the privileges of their guild; for the odd contradictions of fact and logic into which they have thus been precipitated, are hardly less amusing than pitiable.

The whole energies of the Board and the President are directed to prove:

THAT AGRICULTURAL COLLEGES ARE FAILURES.

THAT THERE IS NO DEMAND FOR AGRICULTURAL EDUCATION —*i. e.* THAT THE UNIVERSITY HAS NO AGRICULTURAL STUDENTS

THAT THE ONLY REASON WHY AGRICULTURE IS NOT TAUGHT PRACTICALLY IS WANT OF MEANS.

THAT THE AGRICULTURAL PROFESSOR IS INEFFICIENT.

THAT THE MANAGEMENT OF THE UNIVERSITY DEMANDS ELEVEN EMINENT LAWYERS TO SECURE ITS SUCCESS.

THAT THE UNIVERSITY HAS AN AGRICULTURIAL COLLEGE NOW, AND THAT THE REGENTS ARE DEVOTING NINETEEN TWENTIETHS OF THE UNIVERSITY INCOME TO ITS DEVELOPEMENT.

THAT OF THE EIGHTEEN PROFESSORS AND INSTRUCTORS, ALL BUT ONE ARE ENGAGED IN TEACHING AGRICULTURE.

THAT THE LEGISLATION ASKED FOR BY THE MEMORIALISTS, TO SECURE SUCH MEANS, OUGHT NOT TO BE GRANTED.

THAT HIS URGENCY IN BEHALF OF AGRICULTURAL EDUCATION IS DISLOYALTY TO HIS EMPLOYERS, AND REQUIRES THAT HE BE MADE AN EXAMPLE OF TO EVIL DOERS.

THAT THESE LAWYERS ARE UNACQUAINTED WITH THE STATUTES RESPECTING THE UNIVERSITY.

DESIRABLE POINTS.

I have said that the remedy for the kind of evils here spoken of is to be found in the rational readjustment of power between the Regents and the Faculty. In any such plan, there are two *desiderata* that should certainly be secured:

1. Legislative action that shall make the summary removl of a Professor impossible, by providing that such removal shall be only for cause, and after fair trial. The justice of this measure is obvious, for what man of superior talent will dedicate his life to University instruction without other guarantee than the pleasure of the Board of Regents? It is not an agreeable thing for a quiet scholar to lie down to rest a University Professor and to find in the morning that his chair has been vacated without notice or reason alleged. Nor is this an imaginary case: it happened three years ago in the instance of a Professor in the University of California, and sent a thrill of horror and shame throughout the world of letters. That such an outrage was possible in a civilized country, in the nineteenth century, is reason enough for demanding that *law* shall regulate where *honor* is silent.

2. Legislative action that shall place in the hands of the Faculty the power of annually choosing from their own number one who, in addition to his professional duties, shall act as executive officer or President of the University. This is the plan devised by the wisdom of Jefferson of the University of Virginia (in which institution it has been in successful operation for over three quarters of a century), and which has been adopted by various modern Universities such as that of Melbourne. (For over a year after the organization of the University, one of the hardest worked professors, John Le Conte, was "acting president;" and this was precisely the period of the greatest harmony and success of the institution.) The advantage of this method, on the score of economy, is obvious; but, to my mind, it has another advantage still more important. As I said in my testimony before you, "Such an officer, being annually elected by the Faculty, and responsible to that body, is in a position analogous to an English Prime Minister, since he may be passed on with regard to confidence or want of confidence." It is, in effect, a self adjusting arrangement, whereby, in the event of a President' ceasing to represent the best interests of the University, he would be removable before his influence could seriously damage the institution. It had been happy indeed, for the Universily of California, had there been such a safeguard against the mischief of an executive officer, who, while a person of respectable at-

tainments is, both by training and temperament, simply incapable of grasping either the grandest phase of modern education or the practical wants of the people of California.

PERSONAL.

It has given me pleasure to appear before your committee, and I have, at considerable personal sacrifice, deferred my journey to New York, for the purpose of doing so, because I am deeply interested in the welfare of the noble institution with which it was my happiness to be connected from the time of its inception until the 3d instant. During five years I devoted myself to its service with passionate ardor, and now that my relations to it are finally severed, my constant prayer is and ever shall be, "God bless the University of California."

These declarations which, if unjustified by the occasian, might savor of self sufficiency, I make now with honest boldness, for the reason that attempts have been made to obscure, if not to obstruct investigation, by raising false issues and side issues, in substituting questions of mere personality for the momentous concernments of the University. I think it my right and duty to make reference to two or three illustrations of this, in connection with my own testimony.

Thus it has been sought to make it appear:

1. That my views on certain matters, were influenced by aspirations for the presidency of the University. This impression was conveyed rather by implication than by direct statement, and is scarcely worthy of serious denial here, for it is notorious that I have ever proclaimed myself not only unambitious of the position, but wholly unfitted for it, both by taste and temperament.

2. That my views should lose their force from my not being a so-called "University-bred" man. If "University breeding" afforded a reasonable guaranty for infallibility of judgment, the objection would be weighty, indeed; though if it does afford such guaranty, I have certainly been unfortunate in many of the products of this miraculous breeding that I have had the honor to encounter. Such mental discipline as may be derived from four or five years attendance on college courses, in several institutions, it was my happiness to gain, by my own effort, amid the bitter experiences of that "chill penury" which, contrary to the poet's phrase, has not always been able to "repress the noble rage." When, a very few years after the period at which the need of bread-winning compelled me to quit my college without a parchment voucher, that same honored institution sent me a master's degree, it was with the statement that it was

merited by literary performances which "University breeding" does not always secure. And, as regards the whole matter of the absurdly *ex post facto* question of my intellectual fitness for a Professor, I shall simply say that the biographic details of my education, such as it was, and of my literary contributions, such as they are, are of record in all the cyclopædias and histories of American literature, published both at home and abroad —a fact which it has not been my good fortune to discover in the case either of my interlocutor, or of the gentlemen who, I believe, suggested the characteristic question (President Gilman).

3. That I have been, while in the University, a maker of text books. What relevancy this can possibly bear to the question of my capacity as a witness on the condition and management of the University, it is not easy to discover. That I ever neglected the duties of my chair to occupy myself with literary labors, I think will hardly be charged by any one cognizant of the facts of the case. And if, in connection with my University work, I have contributed somewhat to educational literature—a fact which, on the occasion of my examination before you, a Regent sought by inference to put in the category of a "high crime and misdemeanor"—I can but say that I have never before heard this considered as other than matter of reasonable pride. I had imagned that it was by just such services that the chairs in Universities are rendered of good repute in the land. And, indeed, I shall have to confess that not only have I, myself, written, but that I have aided and abetted other of my colleagues in writing and publishing works that have found national and international approval; but it may be fairly supposed they will now take warning by the censure that has been passed on me, and *not make any more books.* The temptation to indulge in irony on this subject, while great, must, however, be put aside by me, and I shall content myself with the honest avowal that it was bound up with my deepest convictions of duty as a Professor to do my part for school literature. I judged that as the incumbent of a chair in a University avowedly the head of the public educational system of the State, a praiseworthy piece of work would be to prepare in my own department a series of books which might facilitate the passage from the school to the University, and thus bridge over a gulf which I have always regarded as unhappily too wide.

But enough of these poor matters of personality, which would never have been referred to by me had they not been provoked. My career in the University has ended. The severance of my

connection with the institution was made voluntarily (although not without deep regret on my part), being necessitated by business considerations, the detailed statement of which would not be pertinent to this investigation. What my relations were, both with the Faculty and student, at the time of my resignation, is sufficiently evidenced by the underwritten resolutions adopted by these bodies, respectively:

I

At a meeting of the Faculty of the University of California, held on Friday, March sixth, eighteen hundred and seventy-four, the following resolution was offered by President Welcker, which was unanmiously adopted:

*Resolved*, That it is with deep regret that we learn that our colleague, Professor William Swinton, has, by his resignatiou of the chair, which he has hitherto filled with such distinguished ability and success in this institution, severed his connection with us; *and further*, we heartily tender to Professor Swinton our cordial wishes for his prosperity and happiness in the time to come.

Attest: MARTIN KELLOGG, Dean.

II.

WHEREAS, Necessities have required Professor William Swinton to resign the Chair of English Literature and History in the University of California; therefore,

*Resolved*, That we, students of this University, hereby express our sense of a great loss and our utmost regret in losing him, at once the profound scholar and the genial friend.

*Resolved*, That, in him, we recognize the wise counselor and abiding friend; that to his learning we bow in respect, for his friendship we give him ours, and that in the future we wish him all happiness. Our friendship and best regard will make their journey with him across the continent and take up their home in his.

W. R. DAVIS,
L. S. BURCHARD,
J. E. BUDD,
Committee.

With this statement of facts and opinions, I have the honor to remain, Your obedient servant.

WILLIAM SWINTON.

SACRAMENTO, March 20th, 1874.

# THE

# NEW EDUCATION.

## OBJECTIONS TO THE SYSTEM AS TAUGHT

—IN THE—

## UNIVERSITY OF CALIFORNIA.

"The modern world is full of artillery: and we turn out our children to do battle in it equipped with the shield and sword of an ancient gladiator. Posterity will cry shame on us if we do not remedy this deplorable state of things. Nay, if we live twenty years longer, our own consciencies will cry shame on us. Modern civilization rests upon physical science."—HUXLY.

San Francisco, October 2, 1874.

HON. G. W. PINNEY, Oakland,

Dear Sir:—Learning that you are the author of a pamphlet entitled the "New Education" published over the signature "Columella," I request your consent to its publication in connection with Professor Carr's communication to the Joint Committee of Grangers and Mechanics, Professor Swinton's Testimony before the Legislature, and other documents relative to the Universty.

Respectfully yours,

W. H. BAXTER.
Chairman Committee.

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San Francisco, October 7, 1874.

W. H. BAXTER Esq., Chairman, etc.

Dear Sir:—I have the honor to acknowledge the receipt of your favor of the 2d inst. attributing to me, the authorship of the "New Education," and requesting my consent to its publication with other documents relating to the same subject.

My pamphlet is protected by no copyright. I wrote and published it, with the hope that it might direct the attention of our agriculturists and mechanics to the subjects of which it treats, and to the manner in which those subjects were treated by the California University. These classes, which perform so important an office in all the industrial enterprises of our State and country, cannot discharge a higher or holier duty for humanity in this age, than to see that the object of Congress in the "New Education" is accomplished. They alone, can do it. The reform is in their hands. If it fails to realize all that is promised for it—all the most sanguine expectations of its founders, the blame will be theirs. It is emphatically a trust confided to their intelligence and energy.

Make any use of the pamphlet that will aid the cause of the "New Educaiton." My only care concerning it is, that it does not more fully and clearly express the lively interest, which as a citizen I feel in that most important of all subjects. Wishing you and the associations you represent great success,

I have the honor to be your obedient servant,

G. W. P.

# THE NEW EDUCATION.

"To-day," says Hoyt in his review of the Schools of Agriculture, "no educational question occupies more of the attention of the educators and statesmen of civilized nations, than how to organize and operate institutions and other agencies for the development of agricultural science, and the diffusion of its light among the groping millions who cultivate the soil." In the entire history of educational enterprise, no other subject possesses equal practical interest. Agriculture, the first of human pursuits, is the last to receive the aid of science. This is the single unexplored field, which is yet to witness the most important achievements of civilization. And how much there is of it to explore! From the remotest antiquity, down through all the nations, agriculture has been the elementary pursuit, and yet, as compared with other occupations, how little of improvement has it known. Wherever and whenever experiments have been tried, results have been wonderful, but the earth has been too generous a mother to encourage experiment. Agriculture has crept steadily through the ages, enriching nations and subduing nature, encouraging commerce and the arts, and at all times, either of prosperity or adversity, proving itself the surest, safest, most reliable friend of the human family.

The various processes by which agriculture has grown into an educational question, have been of slow accumulation, and owe their origin to such necessities as from time to time have appeared and been supplied in all parts of the civilized world The experiments of half a century in soils, in crops, in farming implements, in horticulture and in stock raising, have demonstrated the value of science in its application to every branch of agriculture. Papers and periodicals have been established to publish these discoveries. Societies have been organized to enlarge the field of investigation. Geological surveys have been made at vast expense to reveal the riches of the soil. Agricultural reports have been published and circulated, together with seeds and plants, in great variety throughout the country. A department of agriculture has been organized by the government in aid of the pursuit. County and State Fairs have been introduced to encourage farmers. Great, various and multipli-

ed have been the means employed to develope and dignify the pursuit of agriculture, and to give to it a prominence and rank among other pursuits, to which its importance and respectability entitle it. The results have everywhere been attended with success—and not only has agriculture, but all other occupations been improved and enlarged by the enterprise. But every advance made has only demonstrated more clearly, that any efforts less than those which contemplate a thorough fundamental course of instruction, that shall train and educate the agriculturist in various branches of his occupation, must fail to attain the high standard, which as the leading pursuit in America, agriculture should maintain. Our country with its immense agricultural domain, fresh from the hands of the creator, has never fully realized the importance of agricultural education. The soil has always supplied our home wants, and steadily increased our commerece with other nations—and until our population, like that of Europe, becomes so great that every acre is needed to afford the means of subsistence, it will continue to do so. We might go on prosperously for a century or more, without any failure of ugricultural increase or wealth, and make no greater efforts than we have made to improve and elevate that pursuit, but with what result? At the close of the period, we would have an ignorant, stationary population of farmers—a half cultivated, worn out soil, and all efforts at improvoments would then prove hopeless.

The political considerations which dictate a course of thorough education for our agriculturists, are quite as important as any which are connected with the subject as a pursuit. Our farmers should understand our government as well as our soil. They should be as capable of comprehending human as natural laws, and should know how the evils of state are to be remedied, as well as the evils of their crops. It is this sort of an education that our government is seeking to introduce through the various colleges which have been established by its munficence.

The question of establishing State Colleges of Agriculture was first agitated in America, by prominent agriculturists, in 1837. To Michigan belongs the honor of establishing the first agricultural college, as long ago as 1855. Never since have the objects of such an institution been more fully comprehended. "They are," the Act says—"firstly, to impart a knowledge of science and its applications to the arts of life—secondly to afford to its students the privilege of daily manual labor, that neither health nor inclination to labor may be lost, and that the principles taught in the schools may be more firmly fixed in the

mind—thirdly, to porsecute experiments for the promotion of agriculture—fourthly, to offer the means of a general education to the farming classes."

Similar institutions were soon chartered by the legislature of New York, Maryland and Pennsylvania. Then came the national endowment of 1862, announcing that its object, "without excluding other scientific and classical studies, and including military tactics, was to teach such branches of learning as are related to agricultre and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pusuits and professions of life."

The donation was made for the industrial classes—mechanics, farmers, laborers. It made instruction in their pursuits a specialty, without excluding other scientific and classical studies. The chief purpose of the grant was to introduce a thorough course of instruction in all the States, in all branches relating to agriculture and mechanics. Its object was to educate that class of our citizens who were engaged or about to engage in these pursuits for a livelihood, whether as teachers or operatives—not those who made choice of the professions. Other institutions for instruction in the "higher education," as it is called, were numerous and well endowed. These were neglected branches and could not be introduced without this aid. As a consequence, a very large portion of our population, embracing that class engaged in the most productive pursuits of the nation, were deprived of the means of education in those branches pertaining to their occupation.

Any other interpretation than this of the object of Congress, is a perversion of its meaning and intention. Any appropriation of the revenues derivable from the endowment, not made specifically for the promotion of the liberal and practical education of the industiral classes, is a violation of good faith by the States which accepted it.

Congress judged, that if properly conducted, this "new education" would work a long desired revolution in the leading pursuits of the nation, and establish their claims to a just and equal rank with the learned profession. Many of the best and strongest minds in the nation would be devoted to agriculture and mechanics. The results would be seen in a steady improvement of the mehanical and inventive genius of the people, and a triumph over nature in the reclamation of worn out soils in the culture of unproductive lands and in the thorough developement of our agricultural resources.

The gift was strictly guarded. The States were to pay all ex-

penses. No part of the fund, either directly or indiredtly should be used to purchase, erect, repair or preserve any building. The acceptance of the land was a guarantee by the State that the capital should be kept intact. If it became diminished or lost, the State should replace it.

The effect of the endowment was inspirational. Most of the States responded immediately to the grand design. Less than twelve years have elapsed since the law was passed. At that time there were three agricultural colleges in the Union. Now there are thirty-eight.

How did they understand the object of Congress? We learn from their action. Of thirty-eight colleges that have been Organized, thirty-two besides providing all means for scientific instruction, are furnished with experimental farms, and twenty-one make satisfactory reports of progress, in raising crops, rotation, fertilizing, selection of different varieties of stock cattle, horses, sheep, culture of fruit, and instruction in veterinary science, horticulture, &c. Appended to the report of the President of Pennsylvania College for the year 1873, are tables showing what experiments have been made in rotation of crops, and in the use and variety of fertilizers for a period of five years, commencing with 1869. Similar tables accompany the Virginia report. Many of the reports of other States contain important hints on a great number of subjects connected with the practical cultivation, the qualities of different breeds of domestic animals, and comparative utility of various farming implements. The course of instruction, the mode in which chemical and other scientific experiments are practically illustrated in-door and out-door exercises, are set forth in many of the reports with distinctiveness and precsion. They express a determination to supply their institutions with all needful facilities for carrying out the purposes of the grant; and the fullest confidence in their power to accomplish the most sanguine hopes of their friends. A feeling of regret is expressed by some, that the grant is not large enough to justify many important expenditures. Those States that have been delayed in their organizations, avow a determination to make up for loss of time by giving the subject immediate attention.

The aggregate number of students in attendance upon these institutions, and the Universities with which many of them are connected, for the collegiate year of 1872, as we learn from the report of the department of agriculture, was 5373. Of this number, 2604 were in the Agricultural and Mechanical Colleges. A gratifying feature in these reports, is that they generally

show an increased list of students year after year. The President of the Pennsylvania College, says:—farming is not an *ad captandum* branch in the catalogue, but a regular and productive pursuit. Chemistry is practical analysis in laboratory, the text book being only a basis; botany is work in the fields, and not a study of pictures only; mathematics is carried also into the fields, and practical surveyors and engineers are made."

We learn from the general outline of the character of these institutions, that the people understand the great design of this new system of education, to be an enlargement upon all former systems, by the introduction of practical branches, which shall so unite the theories of learning and science with technical exemplifications, that they can be utilized in all the great pursuits of life. Opposed at first by a few of our leading educators, the system has already proved the fallacy of their strongest objections. And such men as the lamented Agassiz, who for years after its introduction, was skeptical in regard to its possible utility, now unite with him, in the confession, that it has proven a complete success and is entitled to rank with other scientific institutions.

Other educators have spoken of the system in terms of the highest commendation. President White of the Cornell University, says:

"It is to provide fully for an industrial, scientific, and general education suited to our land and time—an education in which scientific and industrial studies should knit into its very core, while other studies should also be provided for. And, besides this, as it has been seen that the States in rebellion had gained great advantage from the military education of students, it was declared that instruction in military tactics shall also be included.

"This act of 1862 was, then, a noble, comprehensive scheme, looking, as you see, first of all at the *industries of the nation*, but at the same time insisting on provision for the broadest scientific and general culture."

President Clark of the Massachusetts Agricultural College, says of it:

"The opportunity for acquiring a valuable education is offered to all the young men of the country, and if the farmers desire to have their sons trained in the best manner to pursue intelligently the profession of their fathers, let them patronize the College. If however there are others who wish to have their sons enjoy the advantages of scientific and literary culture, under circumstances calculated to interest them in practical affairs, and to prepare them for a life of industry and usefulness, they have equal rights with the farmers, and shall have eqally cordial welcome."

President Read of the University of the State of Missouri, says:

"This school is to be a school both of science and its applications; its purpose to teach knowledge and art—first to know, and then to do, and to do it in the best manner. The popular objection to our Colleges takes this form, '*too much theory—too little practice.*' As an educator, I have long been convinced that, even as a part of discipline itself, the *practical* should follow the *theoretic*,

as its natural compliment and sequel, and without this, all discipline is defective and insufficient.

"There has been a great struggle on this question, what shall the education of our higher institutions be? Nor is the question yet settled. There is perhaps no subject upon which it is more difficult to break away from our natural conservatism—perhaps I had better say our old prejudices—than education. We cling not only to the subjects and methods in which we have been taught, but even tolerate usages connected with our institutions which almost outrage humanity.

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"The prejudices of early education, natural taste, the pursuits of Professorial life, a fondness for classical criticism, caused me to over value what I best understood, and upon which I had spent years of study. Thus much I may be permitted to say as to myself. I do not now undervalue any part of my education—whether that of science or letters. But this I do say, in the shortness of human life, after proper rudimentary training, we must resort to special courses. This is the tendency of our great Universitie, and with this freedom of courses there is no reason to keep up controversy. Time will solve problems which now disturb the minds of men, and doubtless will sweep away many of our most cherished opinions. But on the subject of an adapted or special education, there cannot be longer dispute among thinking men."

Professor Swinton late of the University of California, and whose capabilities as a teacher are well known to all our readers, says:

"The progress, success and benefits of the industrial Universities and Colleges founded by Congress to promote agriculture and the mechanic arts, considering the means employed, the recentness of their establishment, and the obstruction put in their way by the caste prejudice of the classicists and scientific schoolmen, have been far beyond that of any other higher institutions of learning in the country, and form indeed the most inspiring educational fact of the nineteenth century."

Opinions of similar character, uttered by the leading educators of this country and Europe, might be quoted to fill a volume, but let these suffice to correct any impression unfavorable to the system, which may have gained currency through local opposition, or "caste prejudice." It is certain, that to day, the new system of education is rapidly growing in favor with those who, on its first appearance, regraded it with great distrust.

We have not considered in this opposition of the classicist, the opposition of those who fear the developements of science, and distrust that sort of mental training which looks beyond theory for a confirmation of its assumptions. Their number is diminishing daily, by natural causes; some still remain to dispute even the truths of geology, because they overturn the theory of the six days creation, and destroy their hopes of future salvation. They never will be persuaded that a union of theory with practice, which bases truth upon experiment, can fail to produce a nation of infidels. There is no such God as they have worshiped, and no such Heaven as they hope to attain in such a system. To all such, we have no other reply, than that

there is no truth in the universe too sacred for investigation. We have a little respect for the opinions of those who fear the effects a of thorough scientific training, as for those who, after searching nature through all her works, cannot look up through them to "Nature's God."

We need be at no loss to comprehend the views entertained of the "new education," by its most munificent patrons. Ezra Cornell inspired to the act by the Congressional donation, gave nearly a million dollars to create a University where, in his own sententious language, "any person can find instruction in any study." Agriculture and mechanics illustrated by experiments in the field and in the workshop, and embracing all practical details of the manner in which those pursuits should be conducted, are among the most prominent branches taught in that institution. No distinction is recognized between professional and industrial students. No student can pass through his four years course, without receiving as a condition for graduation a course of lectures on general agriculture.

What but the increasing confidence of educators in the system, could have induced old Harvard, our model University, to take under its protection the institution established in execution of the trust created by the will of Benjamin Bussy? This school is intended for the following class of persons:

"1. Young men who intend to become practical farmers, gardeners, florists, or landscape gardeners.

2. Young men who will naturally be called upon to manage large estates—such as the sons of large farmers and of city men who own country places.

3. Young men of character, good judgment and native force, who have neither taste nor aptitude for literary studies, but being fond of country life and observant of natural objects, would make when thoroughly trained, good stewards or overseers of gentlemen's estates.

4. Teachers, or young men preparing to be teachers, who expect to be called upon to teach some of the subjects taught in this schools.

5. Persons who wish to familiarize themselves with some special branch of Agriculture, Horticulture or applied Zoology.

A year's study in the Lawrence Scientific School also connected with the University, is required as preparatory to entry into the Bussy institution. In these two institutions, the student has the instruction of thirty-five different teachers on special branches of the science of agriculture. The instruction is illustrated by the rich scientific collections of Harvard University; a botanic garden, a large and profitable farm, green houses, propagating houses and field experiments.

To come nearer home. Among the munificent donations of our fellow citizen, James Lick, none will benefit a larger or more deserving class, than the $300,000 appropriated to the erection and endowment of a school for the mechanics in San

Francisco. And yet, without the confidence inspired by the public estimation, in which that branch of instruction is held, the donation would never have been made.

Such benefactions as these show how strong a hold the new education has taken on the public mind. The object of Peter Cooper in establishing his institute in New York City, was to furnish a kind of practical instruction, which could not be obtained in the higher institutions. He could have endowed several professorships in Yale or Harvard with the same money but as the result of his experiment has proved, he would never have been regarded as a benefactor, by thousands who have been rescued from the hard life by city drudgery, for more profitable and congenial occupation. He might have aided the "higher education," but he would not have aided the education of the poor and lowly.

The Agricultural and Mechanical Colleges bridge over the gulf in educational facilities, that has hertofore existed between the professional and industrial classes. They break down the royal road to learning, and give dignity to the most useful pursuits of life, equal to that claimed for the most learned. They educate alike the head and the hand, and train the muscles and sinews to obey the thought. They make the soil and its products a study which will contribute more to the greatness and wealth of the nation, more to the happiness and elevation of our race, than any other institution in the world.

These practical advantages commend themselves to the sympathies and support of that great portion of our fellows who are to be benefited by them. The wealthy farmer, mechanic or merchant who fails to appreciate, and hence to admit, the particular utility of a classical education, and closes his purse strings against every appeal to aid it, cannot be blind to the wide spread and practical blessings which must flow from this new system, nor deaf to the claims it has upon his class of society for assistance in the hour of need. Nothing is more certain in the future, if we may judge from the records of the past, than that the "new education" when generally undersood and appreciated, will never want for means necessary to effect its widest dissemination.

The "new education" will make mechanical and agricultural pursuits attractive. The country needs farmers and mechanics more than it needs lawyers, physicians and clergymen. The professions are all overcrowded. More than half the number of those engaged in them, eke out an unprofitable, unremuner ative existence; few in proportion attain to eminence, and many

depend upon other pursuits for the acquisisition of wealth. One great reason for this is, that neither farming or mechanics of themselves, present to the youthful mind, especially to young men of ambition and enterprise, any of those opportunities for intellectual renown, which are the necessary conditions of successful professional life. The avenues to cultivated society, to acquaintance with men of eminence, to intimacy in personal relations with men of education, are opened grudgingly to the most successful agriculturists and mechanics; and to those in humble condition closed altogether. The new system, by making these pursuits intellectual as well as useful, will obtain for them an equal rank with the professions. Let our young men see that equal opportunity is afforded for eminence in the one pursuit as the other, and the time will soon come when our great men and rulers will as often be found among the industrial as the professional classes. Farmer's sons will then from choice follow the occupation of their sires; but will be none the less qualified to fill with ability and dignity, the highest positions in public life.

But these pursuits to be made attractive must have thorough culture. The lessons of the lecture room must be illustrated in the field and the workshop. These are the real laboratories where the student can practice and observe the benefits of applied science—the only means by which he can make an accomplishment of an otherwise hard and laborious occupation.

The culture too, without being necessarily ornamental or elegant, must be liberal and comprehensive, so as to afford the student an outlook from his pursuit upon the world of science and letters, but this must not be mistaken for the grand object of his life.

Nothing less than a thorough, radical course of instruction can ever convince the farmers and mechanics of the utility of the new system. They are not as a class scientific men. They must have practical exemplification of the utility of these colleges before they can give them their confidence. If they can see the experiments in agriculture and horticulture—the selected stock, the crops, the fruits, if they can receive the seeds, read the results of the various methods of handling, reclaiming and fertilizing soils, the information thus given them will do more to build up colleges and fill them with students, than all the labor and instruction of the class room. It is but fair to presume that it was because they did not see any of these appliances to successful culture in the University of California, that the two great producing classes of the State memoralized

the Legislature on the subject at its recent session. And what did they say—listen:

"Believing that the first and higest employment of men is to feed, shelter and clothe the world, we ask that the graduates of our industrial college may be peers of scholars in mental culture, and peers of laborers in manual skill and physical developement. Agriculture in its various departments should be so taught and practiced in our University as to send forth scientific farmers, whose labor and skill can utilize the soil and delvelope its greatest resources while the mechanical department should graduate learned and skilled mechanics; and it is the earnest desire of the agriculturists and mechanics of this state to make these great departments of industry the leading feature of our State University."

Was this appeal unnatural? The University had been in existence six years. It had received the government endowment and was virtually pledged by its charter to establish among its first departments a College of Agriculture and a College of Mechanics. Thirty-two colleges for instruction in these pursuits had been established in as many States of the Union, and were in successful operation. The farmers and mechanics learned from the reports they had made to the government, that they were not only provided with all necessary scientific apparatus, but they had farms under cultivation, green houses, arboretums, orchards, that they were raising fine stock in cattle, horses and sheep, making numerous experiments in all the varieties of culture, and the occupations incidental to farm life, and realizing to a very considerable degree all the beneficent purposes of their creation. The same volume which contained these facts, informed them, under the authority of the new President of their University, that while they have a farm, "students were not instructed in agriculture outside of the school room." They knew from observations that agriculture and mechanics were virtually ignored, and that nothing would be done to assign them a proper status in the curriculum of the institution, unless legislation compelled it. These were the reasons which caused this complaint by the people.

The attempt to ridicule this demand of the people in the editorial pages of a recent number of the Atlantic Monthly, is not the least objectional feature in an article whose distinguishing qualities are ingenuity of misrepresentation, and utter barrenness of fact. The very memorial, there so flippantly characterized, came near destroying the University. Neither the President or the Board of Regents replied to the legislative demand for information, which followed the memorial with lightness, or in a tone of assumed superiority. It required all their adroitness to gloss over, cover up and conceal the charges arrayed in the bold and manly indictment of the people. And to prove that they did not, as is intimated in the Atlantic article, originate in

any capricious desire of "the uninformed, who wanted a good thing," or in "popular clamor," but in the most substantial causes for complaint, we have only to refer to a few of the developements they occasioned.

It is only necessary in this connection to refer to the reply of the Professor of Agriculture, to inquiries by the Board of Regents as to the need and feasibilities of the institution, which is published with the statement of the board made in reply to the qustions of the Legislature. He says:

"What I regard as feasible, and imperatively necessary, is first the adoption of a plan of operations for the practical development of the department.

That an annual appropriation of $500 be made for the purchase of seeds, etc. of our indigenous vegetation, for home use, exchanges, etc.

That an annual appropriation of $500 be made for the purchase and introduction of fruit trees not existing in this State.

That a green house and a small porpagating house be erected. That a competent gardener be appointed. That it shall be the duty of the Professor of Agriculture to superintend these operations, etc.

To this I would add, I consider important not to lose another season of growth, and that the labor of students be utilized with a view to confer skill in the pursuits of Agriculture and Horticulture.

2. The employment of experts in special culture, as the vine, silk, fish, in veterinary science, agricultural entomology, and the mechanics of agriculture, to give from four to fifteen lectures annually on each of the above specialties.

3. The holding at the University of an annual farmers' institute, for the discussions and comparisons of views and methods, as has been done at other agricultural colleges, (especially Illinois; see State reports.)"

Now it is certain, that when this letter was written (Feb. 26, 1874,) our University was in need of all the aids to agricultural instruction mentioned in it, and yet these are among the very first auxiliaries to instruction provided by other institutions. Indeed the Professor of Agriculture has been soliciting the Board of Regents for them, for the past four years, all of which period he has been lecturing and striving with such slender means as the Board allowed, to give instruction in agriculture.

The memorial, among much other matter; called forth this letter, which tells its own story of our Agricultural College for the past six years. Was there not cause for "popular clamor?" And does it not prove, that while farmers and mechanics are duly observant of their own rights, they will not be satisfied with anything less than a thorough institution.

No greater or more important object was contemplated in the establishment of these institutions, than that of educating and qualifying teachers in mechanics and agriculture. A demand for instruction in these pursuits would be a natural outgrowth of the system. As this increased, the College as an advanced educator, would become as indispensable as the normal school

in the preparation of teachers for our common schools. The instructor in these sciences would rank with other men of learning. The young man who made choice of this occupation would meet with hundreds of subjects in the wide field afforded him for experiment and investigation, full of much needed practical information. The opportunities for authorship upon new applications of science would be illimitable, and each improvement of them would probably prove a benefaction to the world. Brief as has been the existence of these institutions, they have already demonstrated their tendency to an efficiency in this kind of culture. But these labors have been the result of faithful, persistent experiment in the field and in the laboratory. In so vast a field as that of agriculture, where millions are involved in the success or failure of a single product, a single discovery will oftimes prove of more value than the entire endowment of the institution credited with making it.

President White of Cornell University, speaking of the "fitting up an establishment for experiments in the best rotation of crops and in the feeding of cattle," says that the Hon. George Geddes, whose jugment in such matters is beyond dispute, said in allusion to it:

"This experiment fairly tried will be worth to the State of New York more than your whole endowment, no matter which way it turns out—no matter whether soiling is found profitable or unprofitable."

The same compliment has been paid to the Massachusetts Agricultural College by no less an educator than Professor Agassiz, who declared that the production of the single paper on the circulation of sap in the sugar maple and other species of trees, "was an ample return for all that had been expended on the College."

No State in the union possesses greater or more numerous interests than ours, to be benefited by valuable discoveries in various kinds of culture—in farming implements—in agricultural manufactures, and in the selection and improvement of stock. The same may be said of its varied opportunities to profit by improvements in mining and operative mechanics. If our University could furnish a teacher a year competent to give technical instruction in these branches, the benefit of the industrial and agricultural classes derivable from his labors would be incalculable. Reflect for a moment upon the vast yield even now of our fields and mines, and then contemplate if you can, their probable increase within the next quarter of a century. Is it not worth all that we can do, both with the governmental bounty and the products of voluntary munificence to make our Colleges equal to the demand of this immense theatre for a display of

their capabililties? Shall they fail for the want of any appilance either of science or illustration in giving value to any experiments which may enhance the interests of the State?

In enumerating the various objects sought by the new system, that of furnishing our young men whose tastes incline them to adopt agriculture or mechanics as a pursuit, with the means of liberal and special culture is very prominent. How many, fitted by nature to adorn these occupations, nave frittered away their lives in those of less congenial character for want of the proper aids to developement, or because of some supposed inferiority of condition incident to an industrial life. All such, and there are thousands in every commonwealth, can now indulge their predilections without sacrificing their ambition. They are the men who make the best farmers and mechanics who fail in professional life, and in the walks prescribed by what is termed *par excellence*, the "higher education." Unfitted by inclination for classical pursuits, and still ambitious of renown, now that the way is open, they will leave for others better qualified the devious paths of politics, journalism and the learned professions, to climb by a more harmonious route the mount of immortality. And for this great multitude which is to supply the nation with its future artists, mechanics, engineers and farmers, the way should be made as plain and easy as possible. They will need all that applied science can do to fit them for life work. If to make the perfect scholar, the eminent divine, the adroit lawyer, the great statesman, a large foreground of ancient and modern culture is indispensable, so is it equally urgent that to produce men similarly equipped for industrial renown, they should have an education which unites with liberal knowledge the most thorough training in their chosen pursuits. The eye, the ear, the hand, the muscle, must each obey the creative dictates of the brain.

Is it claiming too much for this new system, to say that in its future growth and developement it may afford a more practical solution of the question, what shall we do with our boys? than any plan yet submitted to the public. The best use we can make of a young man is to educate him. As a general rule education overcomes depravity. That class of population which we call "our boys," is idle, vicious, and growing up in crime, because it has no reputable means of support. As noble minds, as generuos hearts, as ambitious hopes, as pure and lofty aims, animate these boys as any other class, if they can only be provided with means for their developement. Afford them the opportunity for culture, and tell them what it will do for them,

and how many of them will refuse to avail themselves of it? It will require money to accomplish such an object, but to what better use can money be applied? Is it not better in every point of view to pay for the cultivation of "our boys," than to pay for their prosecution? Is not such culture as they can obtain from the new system of education, to be preferred to forcing them into service as seamen? Give to this new education all the scope it require for a perfect developement, and education will become as much an obligation in this government as it is in Prussia. When that day arrives, California will cease to ask: what shall we do with our boys? The remarkable imitative faculty of the Chinese gives them a great advantage over our own laborers in obtaining emplopment. This would not be the case in Prussia or the German States, where the use of tools is taught as part of the ordinary system of instruction. The new education will not be confined to colleges any longer than is necessary to open the eyes of the thinking masses to the importance of its introduction in the elementary schools. Dr. Huxley truthfully says:

"At present, education is almost entirely devoted to the cultivation of the power of expression, and of the sense of literary beauty. The matter of having anything to say beyond a hash of other people's opinions; or of possessing any criterion of beauty so that we may distinguish between the godlike and the devilish, is left aside as of no moment. I think I do not err in saying that if science were made the foundation of education, instead of being at most stuck on the cornice to the edifice, this state of things could not exist."

The same writer advocates the instruction of physical science as a leading element of education in "those primary schools, in which the children of the poor are expected to turn to the best account the little time they can devote to the acquisition of knowledge."

"What I mean is," he says, "that no boy or girl should leave school without possessing a grasp of the general character of science, and without having been disciplined more or less in the methods of all sciences; so that when turned into the world to make their own way. they shall be prepared to face scientific problems, not by knowing at once the conditions of every problem, or by being able at once to solve it; but by being familiar with the general current of scientific thought, and by being able to apply the methods of science in the proper way when they have acquainted themselves with the special problem."

Can we not see that this course of instruction when pursued under a compulsory law, must produce a more efficient and self reliant people than any now adopted? Such a system for all our schools will sooner or later be evolved as a natural and necessary result of the success of our Agricultural and Mechanical Colleges.

Is the scheme adopted and published of our University calculated to accomplish any of the objects sought by the new system? We have before us the register of the University, the statements of the Regents to the joint committee of the Legislature, and the address of President Gilman before the Legisla-

ture. These are supposed to contain the views of the officers of the University relating to the agricultural and mechanical college, and the methods of instruction in those particular branches. If we are to interpret the register by the statements of the Regents and the address of the President, we shall learn that there is in fact but one Professor in each of the special branches —and that the other instruction purporting to be given by the special colleges is the same in all, and in no degree differs from the course of instruction of those colleges which have no special courses. In other words, all that a special student in agriculture or mechanics learns from other professors, than the two charged with those specialities, he could learn at Yale or Bowdoin, or any other University which has no agricultural or mechanical department. These two colleges therefore, have one Porfessor each and no more. In all other respects the University of California is simply a college of letters. Neither agriculture or mechanics can be considered the "leading object" of the institution, unless it can be made to appear that all the English branches ordinarily taught in our colleges relate to these pursuits. The register is deceptive, and without explanation, would convey the impression that both the Agricultural and Mechnical Colleges were supplied with a separate faculty, and pursued such courses of instruction as were generally adopted by other scientific institutions.

Very little has yet been done either in the agricultural or mechanical department of the University, still, if there were any promise of completness in the future, this might not be the proper time to complain of the past. But if every promise for the future were fulfilled, the institution would be deficient in those ample means and forms of instruction so generally adopt-elsewhere. Both the President and the Board of Regents seem to realize that some sort of apology is necessary to the public as well for past deficiencies, as for the future shape they intend to give to agricultural and mechanical instruction.

"If," says the President, "careful inquiry should show that under the most favorable circumstances (such as large funds, fine farms, capital teachers, and practical co-operators,) the friends of agricultural education in Germany and in France, in New England and in the Mississippi Valley, were disappointed; and that men as eager as any of you to promote the progress of agriculture, have abandoned many of the hopes they held and the plans they tried here within the last few years, and are now seeking by other methods to reach the same result, would it not be wise for California to avail herself of this experience.?"

"Would it not be well before determining to make any radical change in the organization of the University, or increasing any extraordinary expenses, to ascertain the lessons of experience elsewhere?"

In the illustration of his meaning, the President cites the in-

stances of one French and one German Agricultural College, having changed their locations from country to city, in order to obtain for their students the benefit of the libraries, museums and courses of instruction of other institutions, and of there having been but seven students in agriculture among four hundred and sixty-one in attendance upon the Cornell University, and three in the Bussey Institution the past year.

It is quite clear that so much of this illustration as relates to the change of location in the Colleges alluded to, can have no reference to our agricultural and mechanical colleges. They are part of a University. They have or are supposed to have all the benefits of the highest culture. The students can attend all the lectures, have access to the museums and libraries, and other courses of instruction so far as necessary to facilitate their progress in the special branches.

As to the other point, that so few students attend the Agricultural Colleges, it has been fully answered by Dr. White, the President of Cornell University. He says:

"That the number is at present very small, but I presume that no thougtful man expected that so early a period after the establishment, the number would be very large, nor, indeed do I expect that for some years to come the number will greatly increase. In a new country like ours, those professions which present the most brilliant returns will be sought for first."

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"There are those who are now living amongst us, who will stand among a hundred millions of citizens within the boundaries of this Republic. When that day comes—nay, long before—the present condition of things must change. The present system of routine cultivation, this present system of 'skinning' lands and then running away to soils more fruitful, for the intention of robbing and running away from them in turn, cannot last. Men must get a subsistence on less and less land; and they can only get it by bringing to bear upon it better cultivation."

* * * * * * * *

"But suppose that no young men came forward to take agricultural studides, the new education would still tell powerfully on agriculture. Think you that we can send out year after year, as we did last year, a hundred graduates from all our various departments, whose powers of observation have been trained and whose real knowledge of subjects bearing on agriculture has been extended by close study in Botany, Animal Physiology, Geology and Chemistry, without its telling ultimately on the progress of agriculture?"

Here is the reply of one President to an objection made by another. We leave to our readers to decide which has the better of the argument.

With this reply we might take leave to President Gilman's objections, but his omission to give credit to the large number

of these institutions, both in Europe and America, that have been successful, exposes his argument to the charge of insincerity. It is in part no objection to the system, nor does it support in the smallest degree the suppositious proposition that the "friends of agricultural education" have anywhere "abandoned many of the hopes they have held and the plans tney have tried within the last few years, and are now seeking by other methods to reach the same result." On the contrary it is conclusive of the fact that they are everywhere engaged in perfecting the system with which they have commenced. No system of education ever introduced, encountered fewer diffleulties in its methods, and none in so brief a period, where experiments have been honestly made, has been rewarded with more encouraging results.

The objection of President Gilman is poorly fortified by the Board of Regents. They mistake the people as much as they mistake their own duties in the following unsatisfactory and arrogant announcement.

"They have been minutely informed of the difficulties encountered elsewhere in the solution of this problem, of the disappointments and changes which have occurred in other well known institutions, and of the local complaints which have been uttered respecting the very Colleges and Universities whose example they are urged to follow."

Do they tell the people of what these "disappointsments and changes" and "local complaints" consist? Oh no! this is what they say:

"They beg those who are interested in the problem to examine the catalogues, registers, and reports of other State Colleges, and not rest their opinions upon vague and inaccurate rumors of hostile criticisms."

We will not presume to say what was expected of this request, but we have complied with it to the extent of our power. And we find that in no single instance have these institutions encountered any difficulties, or disappointments, or changes that were impediments to their establishment or progress. All new enterprises require great consideration in the outset. But none of these institutions have failed, though unlike each other in in some important particulars, where a sincere effort has been made to introduce them.

President White of Cornell University, speaking with reference to this feature, says:

"It may appear to some that this difference in modes of carrying out the act in the different States was a misfortune. Far from it. I am prepared to maintain against all comers, that of all the good fortune which has attended the carrying out of the acts of 1862, this variety of plans and methods in the various States was the best."

We should be sorry to perceive under these objections of the

President and Regents, a covert hostility to any instruction in agriculture and mechanics inseparable from belles lettres learning. But with the reasoning of the President, and the course of agricultural instruction indicated, we hardly know in what other light to consider them. They certainly are favorable to no course of agricultural instruction now in vogue in Europe or America. In the former country, where they have had an experience of half a century or more and millions have been expended on these branches of education alone, where large and flourishing institutions exist in great numbers, especially in Germany, it is strange that there cannot be found one college after which to mould a suitable institution for California.

Nor can we see the wisdom in awaiting the results of greater expreience. If the educational system of Hohenheim, the royal industrial schools of Saxony, the polytechnic school of Hanover, and the colleges of agriculture and mechanics in nearly every State in the Union furnish no exemplars, the whole system may be safely pronounced a failure, and the sooner we fall back into the old educational grooves and surrender all ideas of imgrovement the better.

But is this the case. Mr. J. W. Hoyt, the United States Commissioner to the Great Paris Exposition, who examined into the cause of education in both Europe and America, speaks most encouragingly of all the Agricultural and Polytechnic Colleges of Europe. One nowhere gleans from any portion of his critical and detailed analysis of them a single idea to justify the implied inadequacy attributed to them by President Gilman. He says however, that:

"Association between scientific and literary departments, if upon terms of equality and fraternity, is desirable, but not otherwise. The friends of agriculture should make sure therefore in effecting consolidation with any institution of different character and aims, first that the articles of association are wisely drawn, and what is no less important, that the administration of the new and dual institution be confided to men of large, comprehensive and impartial views."

An admonition, which, if it would make our Agricultural and Mechanical College of any efficiency, our people would do well to heed!

But even President Gilman and the Board of Regents are not quite ready to sacrifice the colleges to their own unsupportable predictions of failure. The endowment of '62 will pay for a show of compliance with its requisitions. The prospect of a further increase of their revenues of $30,000 a year, is not a thing to be slighted, and if they do not feel like giving the people the benefit of thorough instructions like Cornell University, the Bussy Institution or the Massachusetts Agricultural College,

they can, at least, give them a semblance in those directions. So, after declaring that Agricultural Colleges are not exactly failures, the President tells us what the University should have in order to complete its facilties for agricultural instruction. When summarized, these recommendations consist as follows:

1. Of a Professor of Agriculture, who when he is provided with adequate facilitses, is free to make experiments, the benefits of which may teach the whole State, while he gives special instruction to special agrtculturists, and general instruction to other students.

2. Two Professorships devoted on the one hand to vegetable life, and on the other to animal life.

3. Instruction in Natural Philosophy, Geology, Natural History, Chemistry, analysis of soils, fertilizers and products, political economy, laws of exchange, value and price, the use of the English language, and as many modern languages as the student pleases, history and the principles of civil rights.

Nearly all the instructions in the foregoing paragraph is inseparable from every University curriculum in the country. Of itself, it belongs no more to agriculture than to all the other branches of education, and though necessary, by no means supplies the places of special instruction.

4. A Museum of vegetable products.

5. A Botanical Garden with an arboretum.

6. As these enterprises mature, practical instruction to be given in the modes of culture, and the right treatment of plants, shrubs and trees.

7. Experiments all over the State as to the conditions of growth under different skies and soils, different fertilizers, different culture.

With such instruction as these facilities may afford, the California Agricultural College expects to send forth farmers to cultivate our great valleys, teachers to instruct the world, and physical scientists to investigate and make discoveries in all the processes of culture and arts incident to farm life. The "hopes" which President Gilman represents to have been disappointed in the institutions of Europe, New York and New England, are to be fully realized in this course of instruction, and all those "objections and difficulties" which the Board of Regents well knew, but would not divulge, are to be overcome by obtaining for it a continuance of public favor.

Compare this instruction with that given by the eight professors and ten teachers of Cornell University, who are engaged in the special instruction of agriculture alone. That comprises the following subjects:

1. The *Chemistry* of Agriculture, including the constituents and analytical composition of soils and of cultivated plants, the constituents and chemical agencies of the atmosphere and of water, and the composition of manures.

2. The *Geology* of Agriculture, including the formation or soils, their chemical, physical, and economic character, their suitability for different kinds of crops, and the principal geological features of various portions of the United States as affecting the soil and productions.

3. The *Physics* of Agriculture, including meteorology, or the laws of climate,

and light and heat as influencing plant life.

4. The *Mechanics* of Agriculture, and their application to the various descriptions of implements and labor required on the farm.

5. The *Botany* of Agriculture, including structural botany, vegetable physiology, vegetable pathology, and a knowledge of crops cultivated for food and for technical purposes.

6. The *Zoology* of Agriculture, including the habits, diseases, and treatment of live stock, the anatomy of the horse, the cow, the sheep, and other farm animals, and all branches of veterinary surgery and medicine, as well as a special consideration of insects injurious to vegetation.

7. The *Economics* of Agriculture, including the sequence of agricultural operations, the economical divisions of labor, the rotation of crops, the imrpovement of the soil by manuring, draining, and liming, farm engineering and construction, general agricnltural policy, and the management of landed property.

The University farm consists of nearly 300 acres. Produce is raised upon it to feed the cattle. The most improved breeds of farm animals are kept. Experiments are made in rotation of crops, summer soiling, winter house feeding of cattle—growth of crops suitable for that purpose, comparative merits of raised and flat drill husbandry tested—fall and spring plowing pure—breed and grade cattle, &c.

In practical agriculture, five hours weekly during the senior year are devoted to technical instruction; this time being divided between lectures, review, agricultural calculations, farm accounts and outdoor instruction. Students are required to visit the farm daily and take part in the work, when the Professor in charge deems it necessary for their insruction.

Evey student is required to spend at least one vacation upon the farm, when, if he chooses to take part in the regular operations, he will be paid according to his ability to work.

Besides the class room exercises, the student devotes as much time as can profitably be spared for the purpose, to actual practice in the botanical, chemical and veterinary laboratories and in the field.

In addition to this ill-practical instruction, the student is taught in all the liberal branches of education, admitted to all the lectures of the University, the library, and knows no distinction caste from his fellows who are pursuing the classics.

Yet this noble institution, if we are to credit President Gilman, has disappointed the hopes of his founders, because the number of its students is so small. And he offers this as a reason why our University should await the result of some more fortunate experiment. In the meantime our agricultural and mechanical students are to be fed upon such shreds and crumbs of knowledge as at the smallest possible expense can supporta claim to the increased but conditional endowment of Congress. For this reason a pretentious register is published, and we are

told of teachers who have volunteered their services free of expense. For this reason experimental stations in different parts of the State are to be established, in lieu of permanent and increasing facilities at the University, and these we are told "will do more to promote the right principles of agriculture, to increase the wealth and elevate the work of the agriculturist, than it will accomplish by teaching a thousand boys to plow."

These stations are simple agencies of the agricultural schools of Germany, but even in their subordinate capacity, they unite local facilities which President Gilman fails to mention. Hoyt, who visited those connected with the ancient Universities of Halle, Jena and Gottingen, says the experimental station—

"consists of a few acres of land—twelve to twenty—divided into small plats for purely experimental purposes, in the midst of, or in the immediate connection with which there is a chemical and physical laboratory, and not unfrequently such accommodations for domestic animals, and such general facilities for physiological investigation as are suggested by the problems of breeding, ordinary feeding, fattening, &c."

He says, "they are destined not only to go hand in hand with the agricultural schools, but to be established in many cases independently, and where it is neither practicable or needful to establish a school."

Even with all these facilities, with laboratories, and domestic animals to make the experiment certain, Hoyt says, "they cannot settle all the questions that must arise, since many of them are limited in scope by circumstances of locality, and can only be determined on the very spot where they arise."

But these are not the kind of stations described by President Gilman. Those have no laboratories or domestic animals, and make no provision for the problems of breeding, ordinary feeding, fattening, &c. They are simply "experiments as to the conditions of growth under different skies and soils, different fertilizers, different culture." All well enough as far as it goes, but wanting in the thoroughness of scientific instruction, and exactly of a piece with the remainder of the patchwork system recommended by the President.

Such stations as those of Europe established throughout California, would far exceed in expense the fullest possible equipment of the University, and after all was completed, and they were in successful operation, they would only be "agencies in the great work of agricultural education. All the other appliances would be just as needful with as without them.

The merit of President Gilman's stations would be that they would "require very little land, and very little outlay," and we might add, that in the form which we give them, they would accomplish very little good. In any event, they would certainly prove miserable substitutes for that thought practical and

scientific knowledge which a student would acquire either at Cornell, Bussy or the Massachusetts Agricultural College. They might, as the President remarks, do more for agriculture than the science could derive from "teaching a thousand boys to plow." And yet plowing has been thought enough of at Cornell to justify the importation of "*Raw plows*" for the instruction of the students. The subject can hardly be disposed of by a sneer.

Our Board of Regents inform us that the College of Agriculture, which was the first established among the Colleges of arts, "has been steadily maintained from its commencement with no diminution of its curriculum, but with increased advantages." How have its advantages been increased? At a meeting of the Board of Regents in July, 1872, Mr. Bolander, the chairman of a special committee to report on the expedience of establishing an experimental garden, put the following questions to the Board:

"Shall we not test the technological value of our native vegetable products? Have we studied our various kinds of timber as to strength and durability? Have we studied our native vegetations, as to the fibres, resins, gums, dyes, paper materials, drugs, oils, etc., it may contain? Do we know as yet any chemical educts of our plants? Do we know the yield in potash by our native gregarious plants? Have we examined into the yield of the iodine and bromine of our immense masses of sea weeds? Have we made any toxicological researches of plants so injurious to stock?

These are questions in Chemistry, a branch which it is claimed the institution is prepared to teach. No excuse can be offered for neglecting it, yet these questions would not have been asked by one of the Regents, if the subjects to which they refer had ever received attention—subjects which would naturally be among the first exercises of a class in chemical agriculture.

Mr. Bolander then proceeds to recommend that the Board of Regents "locate immediately such portions of the University domain as are to be devoted to Agriculture and Horticulture, and cause the same to be accurately surveyed and mapped.

1. For an orchard specimen fruits of all kinds likely to be successfully and profitably raised in some portion of this State, at least five acres.
2. For vineyard, mulberry, textile and oil producing plants, four acres.
3. For culinary vegetables and small fruits, two acres.
4. For the cultivation of all kinds of useful fruits and shade trees, ten acres.
5. For the cultivation of indigenous and foreign and medicinal plants, one acre.
6. For the cultivation of all our native arborescent plants, to serve as a practical introductin to the study of Botany for the students, three acres."

He then recommends further:

1. "That an annual appropriation of $500 be made for the purchase of all kinds of seeds of our indigenous vegetation. These seeds shall be used for exchanges with foreign institutions of a similar nature.

2. That an annual appropriation of $500 be made for the purchase and introduction of fruit trees not existing in this State.
3. That an industrial museum be established with a phyto-chemical laboratory to test the usefulness of plants.
4. That a greenhouse and a small propagating house be erected.
5. That a competent and a scientific gardener be employed to lay out the grounds, and take charge of the entire work.
6. That the preservation, drying and packing of all kinds of fruit be made a special subject of investigation.
7. That vinegar and wine making, silk culture distillation of volatile oil, and paper making be taught in connection with agriculture and horticulture.
8. That it shall be the duty of the Professor of Agriculture to superintend all operations connected with the experimental gardens, to open correspondence with acclimatization societies and institutions of like purpose in foreign countries, and to report annually to the Board of Regents on the progress and conditions of the garden. These reports shall be published at once and distributed at large.
9. That the students be allowed to work a certain length of time during the day, and be compensated therefor.
10. That the surplus of plants raised be distributed throughout the State, to such farmers and persons who are willing to plant the same, and to report annually on their condition.
11. That regular daily observations be made on climatic changes."

These recommendations were made four years after the establishment of the Agricultural College. A glance at the reports made by other agricultural colleges, as published in the report of the department of agriculture, will show that not one of them was unsupplied with many—some with all these aids and forms of instruction before the close of the third year of their existence. What kind of an Agricutural College must that be, which, at the close of four years has made no chemical examination of our timbers and native vegetation—that is unsupplied with seeds—has made no provision for fruit trees—has no green house—no propagating house—no industrial museum—no gardens or gardeners, to say nothing of the absence of a farm and stock and all facilties for manual labor and practical illustratration; that in fact has never caused a survey to be made of its agricultural domain? How much of a "diminution of its curriculum" could be made, and have it retain the name of a college of agriculture? How long can its avowed curriculum be pursued without disclosing to the world the hollowness of its pretensions?

How did the Board dispose of these recommendations of Mr. Bolander? They laid them *temporarily* on the table two years ago, and they have never been heard of since; but within the past three months, since the legislative investigation, and since it became known that government contemplated an examination and a further conditional endowment, they have adopted three or four of the least important of these recommendations, and employed a gardener. But where is the experimental garden—

where the farm—where the stock—where the great practical laboratories which are to illustrate the teachings of the class room?

Have all these improvements which it seems at one time were contemplated, been dispensed with on the recommendation of the new President? Are these among the "difficulties, disappointments and changes which have occurred in other well known institutions," of which the Board of Regents has been "minutely informed?" Is their absence to be supplied by those "other methods to reach the same result," so oracularly alluded to by the President? Does the present course and scope of instruction, as published by the President and Regents, embrace those other methods?

The Board of Regents have adopted for the development of the grounds of the University, the plan of W. H. Hall, Esq. Mr. Hall's report accompanies the "statements" made by the board to the Legislature. It is simply the plan of a landscape and ornamental gardener. Convenience, utility, use, economy, even the land and soil are subordinated to the single element of landscape effect. Mr. Hall says:

"Though the principles of landscape composition should govern in a great measure the arrangement of these grounds, the fact that the institution is one of learning should be held in view in the development of every portion of the lands, but the entire conversion of this beautiful site into a school of practical horticulture and agriculture would be a needless act of vandalism. I would therefore establish a series of botanical studies, grounds for economic botany, the culture of fruits, berries, and farm produce; a forestry, an arboretum and other instructive features, some of which are indicated, stocked with a variety of trees and shrubs; but I would make their arrangement subservient to principles governing the effect of the whole, and not a mere carrying out of botanical classification."

Governed by these views, Mr. Hall has devised a very beautiful plan for the improvement of the University grounds. If the institution were simply a college of letters, nothing would be more suitable, but when we consider that it is impossible to establish an agricultural and mechanical college here, conformable to the advanced views of leading educators in those sciences, without at least one farm, without vineyards and graperies, and barns, and workshops, and accommodations for stock of different kinds, this elaborate ornamentation strikes us as being entirely out of place. The student's taste for esthetics will be improved at the expense of his taste for the more useful studies. And when the time comes, as it surely must, that some or all of the conveniences we have mentioned are needed, this beautiful park will necessarily be disfigured by structures built more for use than beauty. A plan uniting utility with ornament, in which the former should predominate, would much better compass the

"leading" interest of the institution. As the President says of the site, it looks directly toward the Bay, to the Golden Gate, and to the Farallone Islands beyond; one of the most beautiful sites adapted to college instruction."

This grand view itself can compensate for the absence of many of the lesser landscape beauties with which Mr. Hall proposes to adorn the spot. The substantial yeomanry of California, who have prehaps greater interests in the success of the institution than any other class, would be better satisfied to see it supplied with means for ample instruction, than mere landscape ornamentation.

But this improvement is strikingly in harmony with the system of agricultural instruction recommended by the President and Board. As that does not contemplate instruction in plowing and working upon the farm, so this makes no provisions for one. As that does not include the use of domestic animals and instruction in the selection and raising of stock, so this leaves out of view the construction of proper buildings for their accommodation. As that proposes to send its mechanical students to San Francisco workshops, and the public works in the bay for practical instruction, so this has reserved no place for workshops. If the methods of instruction now adopted are ultimately to prevail, there can be no objection to the plan adopted for the development of the grounds; but if these should be changed to meet the views of the people, the forty thousand dollars expended upon the grounds would be literally thrown away.

In view of the facts we have set forth, what can such an Agricultural College as we now have, or as we shall have when all the promises of its President and the Board of Regents are accomplished, do for California? It may be assumed that of our population, one-fourth at least will always be engaged in some of the pursuits of agriculture. Our immense domain must all be cultivated or utilized. The whole world is to partake of our products. Our wheat crop which now amounts to 27,000,000 bushels annually, will double itself every ten years for the next half century. The same may be said of the grape and fruits generally. Many products now in their incipiency, such as cotton, jute, ramie, &c., will swell into prodigious volume as time rolls on, and increase the immensity of our exports. Our State is soon to become famous for the culure and manufacture of silk. The products of our soil will ever be more diversified than those of any other State in the union. The application of science in the irrigation of our valleys, in the reclamation, improvement and cultivation of our waste lands, in the preservation and trans-

portation of our products, is to be of more consequence than any other branches of knowledge taught in our University. Our flocks and herds already enormous, will exceed in numbers and diversity those of any other country. Our ultimate greatness lies in our soil. It is magic that will fill our great harbor with the ships of all nations, and our workshops with artisans. Commerce must come to it for aid. Manufactures will always find it their strongest friend. Even mining with all its promise of untold millions, cannot subsist without it. Wornderful as our growth has been during the past quarter of a century, it forms no criterion by which to judge of its greatness at the close of the next.

In determining therefore what methods of instruction should be pursued in our Agricultural and Mechanical College, should not ample provision be made for the generations who are to carry forward the work of developing our noble State? Shall those strong arms and sinewy frames perform the labor blindly? Shall those active brains expend their powers in mere theory and experiment? No. We can better afford to cramp any other branch of learning than that devoted to agriculture. If there is a spot on earth where all the recognized means for its improvement should have the amplest scope, that spot is California. If we could remove from its locality in Wurtemburg, the Royal Land and Forest Academy of Hohenheim, with its accomplished faculty; its farm of 800 acres; its forest of 5000 acres; its school of practical farming; its experimental stations; its workshops, manufactories, and its thorough, practical, scientific curriculum, it would not exceed the wants of our State. And there is no other State or country where for the benefits it conferred, greater reward would be returned.

It is a mistake to suppose that the intellectual culture needful to qualify professional men, writers and scholars, necessarily enters into the qualifying studies of the agriculturist. His education beyond that of general science and a thorough knowledge in the use of the English language, should be in his pursuit. A thorough training of head and hand in everything relating to the soil. If he can unite experiment with theory—take nothing on trust—know the conditions of success, his education cannot be a failure. This is the aim of the "new education," and unless means are afforded for its attainment equal to the end to be attained, it must fail. Our University, without great and radical changes, can never hope to reach it. It must adopt broader views, a larger scope, more comprehensive plans, and a general system that will give encouragement to all the branches it assumes to teach. It must have farms, and barns, and stock, and work shops

for its students, as well as in door instruction in the sciences. It must have competent teachers, and in its methods of instruction, must be directed by men who are willing to be guided by experience. It must, of itself, be a great teacher in our midst, whose lessons will be respected by the agriculturists of the State, and a censor whose criticism they will always fear. It must command respect as a public benefactor. Its achievements in learning must inspire the people with confidence in its varied capabilites. Its graduates must always be proud to belong to its alumni.

A few experiments in chemistry—a little ornamental work on the college grounds—a smattering in the treatment of fruit trees—the planting of a few acres here and there in different parts of the State, with all the book culture in the world, never did, never can make a practical agriculturist, or even beget a taste for those nobler and sterner duties upon which the great value and merit of the pursuit depends.

We feel it our duty to warn the people of California against an objection, which as yet has appeared only in the form of suggestion and insinuation, that seeks to transfer the government of the University from the State to other hands. The article in the Atlantic Monthly for July, already alluded to, contains the following paragraphs in allusion to the present form of government:

"At the very outset, the question whether the State should maintain an agricultural school, or a University including an agricultural school, was discussed and determined in favor of the comprehensive plan. The laws of the State are clear upon this point.

"With all these prospects, there is a serious danger. The chief supporter of the University may become its chief destroyer. The funds having come chiefly from the public treasury, the legislature of the State has retained a visitorial power, and is disposed to supervise not merely the expenditures of money, but the interior organization, discipline and courses of instruction. The University is not governed by a charter, but by sections of the political code. Its Regents are civil executive officers, individually responsible. The legislature while in session is supreme, having in its hands a despotic power such as kings and parliaments have never possessed in the management of Colleges and Universities. It may at will abolish the Board of Regents, and substitute for it a body selected by popular suffrage.

"This supremacy is nominally the supremacy of the people; but there is danger that it will be the supremacy of ignorant and prejudiced men, acting in haste, under personal pique, and without full consideration of the consequences involved."

The article then proceeds to show how this "supremacy of the people" was illustrated in the efforts of the farmers' granges last winter, at the close of which we find the following jesuitical sentence:

"Many persons wonder why the friends of the University in California, prefer State aid *plus* State interference, rather than private generosity *minus* State interference."

This is only a new and more demonstrative form of expressing the same idea, partially uttered by President Gilman in his address before the Legislature. He says:

"My policy would be, if I were permitted, Mr. Speaker and Gentlemen, to make a suggestion, that the State should do that which is essential, that which is fundamental, and then by its stable course of treatment should induce wealthy men to aid in building up the schools and extending knowledge in all the modern sciences."

Governor Haight, one of the Board of Regents, in addressing the students of his old College recently, expressed a belief that the sole drawback to the University consisted in its dependence upon the Legislature.

If, taken together, these remarks mean anything, they mean that all power of the State over the "interior organization, discipline and courses of instruction" should be surrendered. That being accomplished, this authority shall be exercised at pleasure either by the faculty, the Board of Regents, or perhaps by the President alone. Any methods of study they may adopt shall not be disturbed by "ignorant and prejudiced men," like the farmers' granges last winter. No memorial to the legislature shall drive them to the necessity of another disgraceful disclosure of facts, like that made by the President and Board of Regents, showing that after an existence of six years, both "the leading features" of the University had done literally nothing to promote instruction in agriculture and mechanics. They will not be compelled on the spur of the moment, to patch up a system to meet the exigency, in order to save the institution. No power will compel them to take up and consider recommendations made two years ago, and *temporarily* laid on the table, for giving efficiency to the agricultural department. They will not be betrayed into the meagre statement of what they have done to show "that the good will of the Board towards the Agricultural College may be illustrated."

Who, that is familiar with the Legislative investigations of last winter, does not believe that every act, appointment, appropriation and improvement made since by the Board of Regents, relating to agricultural and mechanical colleges, grew out of that damaging process? They would have remained unnoticed until now, but for the "ignorant and prejudiced" farmers, granges, who had the audacity to memorialize the legislature, and make some charges that unfortunately proved true. The writer for the Atlantic, who seems to understand this matter as well as if he had participated in it, says that "the effort was made to turn out the Board of Regents and replace the members by those who are fresher from the people."

Was it not time? Had not the board by its neglect forfeited all claim to public confidence? And when those people, who in their "ignorance and prejudice" supposed that Congress meant by so declaring, that the Agricultural and Mechanical Colleges should be "leading features," found that little more than a college of letters actually existed, was it strange that they should desire a change?

This investigation, failure as it was in the object sought, was productive of results which clearly demonstrates the necessity of of keeping the University where it is. We should be sorry that this or any other question affecting it, should require partisan interferences, and we feel quite sure it never will, unless precipitatated by those who favor a divorce between the institution and the State. In that event, we shall hope to see the measure put down with an emphasis that will be forever conclusive.

We may not rightly understand the meaning of the President in the suggestion "that the State should do that which is essential, that which is fundamental, and then by its stable course of treatment should induce wealthy men to aid in the building up of the schools and extending knowledge in all the modern sciences." Does it mean that the Agricultural and Mechanical Colleges shall, after being established by the State, depend for future aid, upon voluntary donation, or that this source of support shall apply to the college of letters as well? If the former, it is objectionable. Why should one college be supported by the State and the other by donations? Is the college of letters more worthy of State favor than the college of arts?

If it means that the State shall cease to make any appropriations for the University after a certain time, but by its "stable course of treatment" (what does that mean?) induce wealthy men to make donations, that is objectionable, because it will ultimately remove the institution from the control of the State. There is no danger even from the President's exhibit of the bequests and gifts to the University, that the amounts will ever exceed the wants, how much soever the State and government may give in addition. The institution cannot be too largely endowed, and the "wealthy men" of California need have no delicacy in giving to the full extent of their generosity, through any fear that they will give too much. Neither they, nor the State, nor the government can give to a better cause, unless by improper management, its objects should be defeated.

Thus far in its career, the University has had all it required. If the State has no reason to be proud of the University, she may certainly feel proud of the noble efforts she has made to es-

tablish it. There has been no lack of funds—and the beautiful edifices at Berkeley show that there has been no lack of appreciation of the design of the institution by the State. Indeed the President says :

"The funds of the University are soon to be ample; sufficient I believe, to make it soon unnecessary to ask for further help."

In Morill's New Agricultural College bill, is the following clause :

"If it shall at any time be made to appear to the Secretary of the Interior, by unequivocal evidence, that any State or Territory has not in good faith substantially complied with the provisions of the act named in the first section of this act, as to the use, object and purpose therein contemplated, he shall at once duly notify the Treasurer of the United States, who shall thereafter withhold the payment of any interest which may have accrued, or accrue to any Colleges in such State or Territory, until such time as the Secretary of the Interior shall be satisfied as to the compliance with the provisions of said act and shall so notify the Treasurer aforesaid."

This law will add over $30,000 annually to the permanent endowment of the University, in case it can be shown that the institution has faithfully complied with the provisions of this act, in making agriculture and the mechanic arts the "leading object." We fear for the effect of the answers which the Board of Regents and President of California University will be compelled to make to the searching questions put to them by Congress on this subject. It is no enviable task. It is easier to tell what many of these replies ought to be, than what they will be, if we are to judge from the "statements" of the Board, the University Register, and the President's address. But Congress asks for detailed information. The questions are not what expenditures have been made for the course of general instruction, but for branches relating to agriculture and mechanics. How much for theory and practice—how much for agricultural chemistry —for botany—horticulture, forestry—animal physiology—veterinary practice—economic entomology—irrigation? How much for the experimental farm—the machine shops—mining processes and methods? What are the subjects of study relating to agriculture—what in the mechanic arts? And then those comprehensive questions at the close :

"Has your institution in good faith performed all the conditions and requirements of the statute of July, 1862, and the acts supplementary thereto? If not, state for what cause and in what particular you have failed? Has the gift of the United States been preserved unimpaired and devoted to the purposes of your institution? If not, to what extent has it been impaired or diverted, and under what circumstances?"

We should be glad to feel that the answers to these questions could be favorable to the future interests of the University.

The provisions made for the encouragement of education by the

government have ever been on the broadest scale. Before the adoption of the Constitution, the Continental Congress determined that in every six miles square, the school system should be established. Six hundred and forty acres of every township was conceded for its support—one thirty-sixth of the entire public domain. Education and the settlement of the country were thus, from the first, contemporaneous interests.

When the new States began to come into the Union, the concession was doubled, so that the cause had twelve hundred and eighty acres in each township. The aggregate of the land thus given to the support of the common schools, amounts to seventy millions, five hundred and fifty-nine thousand, one hundred and twelve acres; besides one million, two hundred and forty-four acres granted for seminaries of learning.

Now that the feasibility of a newer, more practical, more advanced system of instruction has been demonstrated, government again advances with its aid, and concedes nine millions, six hundred thousand acres, for its encouragement. And when it is fairly under way it comes to its assistance with a permanent annual endowment. For all this munificence, it naturally expects a return in the increase of public intelligence, and the improvement of the country. It contemplates great progress in the industrial pursuits of the nation. It looks to see the farms, the workshops and the various mining and mechanical occupations, brought under the control of science, and conducted by an educated people. It anticipates a period when every man in the nation shall by the results of educated labor, be placed above want, and become a contributor to the general welfare. Shall California do her part in this great reformation?

COLUMELLA.

# MEMORIAL

OF

# CALIFORNIA STATE GRANGE,

AND

# MECHANICS' DELIBERATIVE ASSEMBLY

ON THE

# STATE UNIVERSITY.

*To the Senate and Assembly of the State of California*:

In accordance with the accompanying resolutions of the State Grange of California, and the Mechanics' Deliberative Assembly of San Francisco, the following petition has been prepared:

## RESOLUTIONS OF STATE GRANGE.

OFFERED BY W. H. BAXTER.

*Resolved*, That a commitee of three be appointed on the subject of agricultural education. Said commitee to inquire particularly into the condition of the Agricultural Department of the State University—what improvements, if any, should be made, and what legislation, if any, is required to secure to the farmers of the State the full benefits of the Agricultural College grant.

*Resolved*, That the true meaning and intent of the Congressional grant (see Act eighteen hundred and sixty-two), was to establish primarily "Agricultural" or "Mechanic Arts" Colleges, and that the funds derived therefrom should be first applied to these purposes, and that the State should render such aid as may be necessary. Such colleges should be mainly under the control of men engaged in these pursuits, and should be practical as well as theoretical.

Adopted. University Commitee: J. W. A. Wright, W. H. Baxter, O. L. Abbot.

## RESOLUTIONS OF MECHANICS' DELIBERATIVE ASSEMBLY.

PRESENTED BY JUDGE E. D. SAWYER.

WHEREAS, The Congressional Act of eighteen hundred and sixty-two, granting lands to the several States, had for its object the promotion of liberal and practical education of the industrial classes; and whereas, this State, in accepting the grant and establishing the University of California, made provisions for a College of Mechanic Arts, and a College of Agriculture, thus guaranteeing to the people of the State practical instruction in these pursuits; therefore,

*Resolved*, That a committee of three be appointed to make such inquiry as may be proper as to what can be done, or what legislation is necessary to secure to the industrial classes, through the State University, its educational advantages.

The resolution was adopted, and E. D. Sawyer, C. C. Terrill, and M. J. Donovan appointed on the commitee.

Your petioners, in furtherance of the above views, and in behalf of the industrial classes of California, both agriculturists and mechanics, would respectfully call the attention of your honorable body to the condition and wants of the State University.

We make this petition with all due deference to the Honorable Board of Regents and Faculty of our University, and with no desire to interfere improperly with any of their rights or duties. But we believe the interests of the people of the State, for whose benefit especially this noble institution was established, require that greater efficiency be given to the agricultural,

mechanical, and other industrial instruction therein, *without diminishing the usefulness of those departments already in successful operation.*

Your petitioners find that the State University resulted from an Act of Congress entitled "An Act donating public lands to the several States and Territories which may provide Colleges *for the benefit of agriculture and the mechanic arts.*" By this Act one hundred and fifty thousand acres (more or less) were donated to California.

In accordance with this munificent provision of the United States Government, our Legislature passed an Act establishing a University, and prescribing that its most *prominent features* should be Colleges of Agriculture and Mechanic Arts.

By reference to the last report from each of the thirty-eight States that shared in this national endowment, to the Department of Agriculture, at Washington, we find nearly every one of them carrying out both the letter and the spirit of the Act of Congress; "that they are attended by over three thousand students, most of whom are practically pursuing agricultural and mechanical studies," with well stocked farms, workshops, and all necessary appliances of instruction.

In the same report, we read that "in California a farm of about two hundred acres has been provided for the Agricultural Department, but it has not been improved, nor are the students instructed in agriculture outside of the school-room.

The Act of Congress requires that the "*leading object*" of the Industrial Universities shall be without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal *and practical* education of the industrial classes *in their several pursuits.*

The organic Act creating the University requires that the College of Agriculture shall first be developed, "and next, that of the Mechanic Arts." We find that of the monthly appropriation (six thousand dollars) for the regular expenses only *one twentieth* is now devoted to the Agricultural Department, and that one Professor is discharging all the duties of instruction on the subjects related to it. *No technical instruction in the mechanic arts has thus far been given.*

The instructional force of the University (besides the President) is as follows:

One Professor of Latin and Greek, and two Assistants.
One Instructor in Hebrew.
One Professor of Mathematics, and two Assistants.
One Professor of Modern Languages, and two Assistants.
One Professor of Chemistry, and two Assistants (advanced students).
One Professor of Physics and Mechanics.
One Professor of Geology and Natural History.
One Professor of Civil Engineering and Astronomy.
One Professor of Rhetoric, History, and English Language.
One Instructor in Drawing.
One Professor in Agriculture, Agricultural Chemistry, and Horticulture.

Your petitioners do, therefore, request, that in accordance with plans pursued at Cornell, the Massachusetts and Michigan Agricultural Colleges, the Universities of Missouri, Illinois, and many others (as may be seen from the report already referred to), that whatever State aid is granted for our University; and as rapidly as the income from the land sales is received, it may be "*first of all* applied to the extending of the Colleges of Agriculture and the Mechanic Arts, and all the departments of instruction which directly bear upon the studies pursued in them."

With this object in view, we earnestly recommend a sufficient appropriation to carry out the following objects:

*First*—The improvement of such portions of the University grounds as may be required to illustrate *practically* the subjects taught in the Department of Agriculture, and the adaptation of this State to various cultures. The erection of a plain, convenient, and commodious farm house, with suitable outhouses, to be occupied by the Professor of Agriculture, or some practical farmer to act under his direction. To this an orchard, vineyard, vegetable and flower garden, and a poultry yard should be attached; also, a propagating house, and, as soon as practicable, a conservatory. The culture of cereals, textiles, and other valuable vegetable productions; the rearing of stock, bees, and silk worms should be illustrated, on a small scale, epitomizing the entire range of agricultural industries.

*Second*—The appropriation of a sufficient amount to secure the necessary *practical* instruction in the mechanic arts; to provide blacksmiths', carpenters', cabinet, and machine shops, and printing press, under the supervision of competent persons.

We by no means expect to accomplish all this at once, but we ask means to secure to the youth of our State, with proper economy and despatch, the advantages enjoyed by students of the best developed institutions which owe their existence to the same foundation. We desire that the grounds of our University, its museums, parks and gardens, may eventually become as those of the Garden of Plants at Paris; and that our College of Mechanic Arts may, without needless delay, rival the Technological School in Boston. We ask that in keeping with the educational standards of the age, the principles of object teaching and practical instruction be conducted in connection with the ideal and theoretical, and occupy in the chief school of the State the position which their importance demands. We believe that nowhere will the dignity of labor be so strongly impressed upon the mind as in those higher institutions of learning, organized for the benefit of the most important class of laborers, where the acquisition of skill goes hand in hand with the acquisition of knowledge.

We find that the Board of Regents, as at present constituted, does not sufficiently represent the various portions and interests of the State. Though composed of gentlemen of the highest position and worth, they reside, mainly, in San Francisco and Oakland, and although they have been zealous in their efforts to secure the prosperity of the institution, we believe that the best interests of education would be promoted by an amendment of the Act so as to unify the University with the other departments of State education. We therefore respectfully ask such

amendment of this Act, and of other Acts, as shall constitute a State Board of Education, having charge of the University, the Normal School, and other public schools, and to consist of fifteen Regents, viz: Seven ex-officio—the Governor, Lieutenant Governor, Speaker of the Assembly, State Superintendent of Public Instruction, President of the State Agricultural Society, Master of the State Grange, and President of the Mechanics' Institute of San Francisco; also two Members from each Congressional District, to be appointed from their districts by the Governor, with the consent of the Senate, for their first terms, and afterwards to be elected by the people as vacancies occur. We also recomend that any nine members shall constitute a quorum, as the Board of Education, or as the Board of Regents for the University or as the Board of Trustees of the State Normal School. We ask that they be so selected as to represent the various industrial interests, occupations, and professions of the citizens of the State.

The law (Article Four, section fourteen hundred and fifty of the new Code), clearly provides that the Secretary of the Board of Regents must be a practical farmer, and must reside and keep his office at the site of the University. These requirements having been hitherto disregarded, we r commend that the law be either rigidly enforced or essentialy modified.

It is generally understood that a portion of the lands donated by Congress for the purposes of industrial education in California, have been sold at five dollars per acre, one fifth of the amount having been paid down, and it is understood that the fund thus obtained has been used in paying Professorships and scholarships in our University. But it is the misfortune of the people of California to know very little about these lands and their present condition, while they do know that in other States, in consequence of mismanagement, only a small part of the real value of school and University lands has been realized. In some instances timber lands valued at thirty and fifty dollars per acre have been taken up, the first payments made, the timber removed, and the lands forfeited. It is clearly the right of the people to have correct information on this subject.

We do therefore petition your honorable body that a University Committee be carefully selected from your number whose duty it shall be to examine fully, minutely, and impartially into the location and present condition of all lands donated to California for these purposes; to ascertain what has accrued from the sales thereof, and how the same has been expended; and that the necessary power be granted them to send for persons, books and papers, to administer the necessary oaths, and take the testimony for the thorough investigation of the whole question, and that the results of such investigation be published without unnecessary delay, for the information of the people.

In view of the important fact that another bill was introduced into Congress, at the late session (by Mr. Merrill, the author of the original bill; see Agricultural Report, pp. 318, 872), which it is expected will be passed during the coming Winter, giving to each of the industrial Universities in operation an additional grant of five hundred thousand acres, we also request that our Legislature memorialize Congress so to amend the law regarding the locations upon unsurveyed lands as to protect actual settlers in their improvements up to the time that the locator can make his selection by sections or subdivisions.

As a means of redress for siezures under the existing law, we also recommend that our Legislature forthwith pass an Act, providing that in all cases where contests have arisen, or may hereafter arise, before the Board of Regents of the University upon the University lands, and the contestant shall feel aggrieved at the decision of said Board, he shall have the right of appeal to the District Court by giving the usual notice of said appeal.

We respectfully recommend that all the University funds be kept in the State Treasury, subject only to order in proper form for University disbursements.

As we are now informed that the funds hitherto appropriated are exhausted, and that additional appropriations will be required at the present session to add other and needed improvements, in accordance with the original plan, your petitioners would respectfully ask that in addition to the sum required for monthly current expenses, the following be *specifically* appropriated:

For farm, buildings, implements, stock, etc., twenty-five thousand dollars.

For *annual* farm and garden expenses, payment of students and other labor, salary of farmer and gardener, expenses of lectures from experts in special cultures, agricultural, entomology, veterinary science, etc., collection and preparation of specimens for museum of agriculture, and incidental expenses, fifteen thousand dollars.

For mechanical shops, printing press, steam engine, and their appurtenances, fifty-thousand dollars.

For annual expenses of mechanical shops, printing press, superintendence, students, and skilled labor, collections of models and raw materials for Museum of Mechanic Arts, lectures on technical subjects connected with mechanical pursuits by skilled persons, and incidental expenses, fifteen thousand dollars.

It is expected that this will furnish the carpenters', cabinet work, and printing for the institution.

It should be borne in mind that these departments are to be created, and that no part of the twenty thousand dollars already expended for chemical and physical apparatus will supply their technical needs.

The completion of the central building, according to the original plan, is a prime necessity in accomplishing the great purpose of the University; for, in the absence of suitable rooms for the present Museum and Library, it has been considered necessary to occupy for this purpose a part of the College of Agriculture, a building designed to supply the wants of this department, as is indicated by the appropriate and bountiful emblems that adorn its outer walls. In this exigency the entire Agricultural Department is forced into the limited space of the north half of the basement of this splendid structure, thus placing in a subordinate position which it was never intended to occupy, what should be the most prominent department of the State University.

We find that a building containing an Assembly Hall, Museum, etc., can be *erected of wood*

at a cost of one hundred and fifty thousand dollars; of brick, with granite facings, two hundred and fifty-six thousand dollars.

The labor of students can be utilized in the construction of this and other needed edifices and deserving young men can in this way be aided in paying a part at least of the expenses of their education. Suitable dwellings should at once be erected for the accommodation of the Professors and club houses for the students, upon the University grounds, for which a moderate rent might be charged. At present, both Professors and students are compelled to live at Oakland, five milesdistant, or to provide themselves accommodations in the yet sparsely-settled neighborhood of Berkeley, at an expense greater than their means will justify. The entire energies of the University body should be concentrated in and around its scholastic home.

In conclusion, we would repeat that it is not now our object to undervalue what has been so well done in the erection of buildings, of which the State may be justly proud; in the opening of the doors of the University to both sexes; in making its instruction in all departments free; in organizing the Military Department and Labor Corps; and in securing a Faculty of zealous and able men. But, believing that the first and highest employment of men is to feed, shelter, and clothe, the world, we ask that the graduates of our industrial colleges may be "peers of scholars in mental culture," and peers of laborers in manual skill and physical development.

The relations of labor to study are admirably stated in the Report of the Missouri University. "The pupil must study till he knows what should be done, why it should be done, and how When this is done, the *intellectual* division of labor is finished. The pupil must labor till he can do work in the farm and shop with skill; then the *manual* division of an industrial education. is finished. In agriculture, he should thus learn whatever is done on the farm, in the garden, orchard, and nursery. If it is asked: "Who shall direct the labors of the pupils?" We answer: "The teacher of the principles put in practice, that useless and impracticable theories. may not be introduced."

Agriculture is far from being an exact science, and its conditions on this coast are peculiar We ask that our University be made useful to the largest number of our citizens, by accurate annual reports of work done, experiments made, and results arrived at.

Agriculture in its various departments, should be so taught and practiced in our University as to send forth scientific farmers, whose labor and skill can utilize the soil and develop its greatest resources, while the mechanical department should *graduate* learned and skilled mechanics, who shall add dignity and worth to labor; and it is the earnest desire and purpose of agriculturists and mechanics of this State to make these great departments of industry the leading features of our State University, and for this purpose we expect your cordial co-operation, and such appropriations as are necessary.

Nor do we think that any mechanical schools in San Francisco, valuable as they may become, can supply the place of the College of Mechanic Arts, as provided by the original plan of the State University.

We also request the present Legislature to order that block letters be prepared and placed upon the east and west faces of the main building of the University, marking it for all time with the words, "AGRICULTURAL COLLEGE OF THE UNIVERSITY OF CALIFORNIA."

J. W. A. WRIGHT, W. H. BAXTER, O. L. ABBOTT,
Committee of State Grange.

E. D. SAWYER, M. J. DONOVAN, Esq, CHAS. C. TERRILL,
Committee of Deliberative Assembly.

*To the Executive Committee, California State Grange:*

Your committee, appointed in accordance with a resolution adopted by the State Grange at its last session, herewith submit this memorial as their report on the measures contained therein.

J. W. A. WRIGHT, W. H. BAXTER, O. L. ABBOTT.

*Resolved*, That the within report be received and adopted. Carried.

*To The Honorable Senate and Assembly of the State of California:*

The Executive Committee of the California State Grange hereby respectfully reccommend that your honorable body take immediate action to carry into effect the measures proposed in this memorial.

J. M. HAMILTON, J. C. MERRYFIELD, A. B. NALLEY,
H. B. JOLLY, G. W. COLBY, J. G. GARDNER,
Executive Committee of California State Grange.

# ERRATA.

On page 15, near bottom of page, for "salray" read *salary*.
On page 23, near centre of page, for "habitate" read *habit it*.
On page 27, near top of page, for "college" read *colleges*,
On page 34, near top of page, for "wished" read *wish*.
On page 44, near centre of page, for "Cornells" read *Cornell*.
On page 46, near centre of page, for "past graduate" read *post graduate*.
On page 50, near bottom of page, for "unestimable" read *inestimable*.
On page 51, near top of page, for "unestimable" read *inestimable*.
On page 76, at top of page, for "Hon. G. W. Pinney" read *Hon. G. M. Pinney*, and at bottom of page, for "G. W. P." read *G. M. P.*
On page 79, near top of page, for "legislature" read *legislatures*.
On page 80, near centre of page, to "practically illustrated," add the word *by*.
On page 93, for "*of* hostile criticisms" read *or*.
On page 94, near bottom of page, for "instructions" read *institutions*.
On page 96, below centre of page, for "*ill* practical" read *all* practical.
On page 96, for "distinction caste" read distinction *of* caste.
On page 98, for "*Raw* plows" read *Raw*.
On page 98, for "expedience" read *expediency*.
On page 98, for "orchard specimen" read orchard *of* specimen fruit, etc.
On page 102, for "It is magic" read *It's* magic.
On page 106, for "Morill" read Morrill.

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